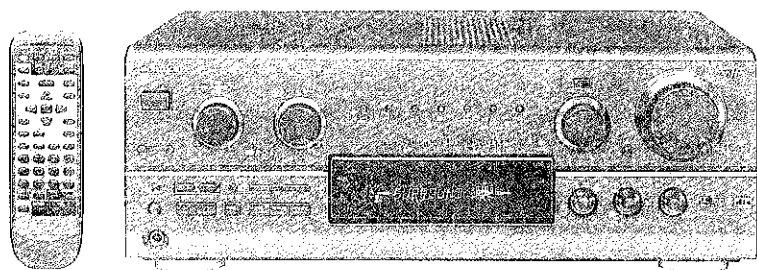


AV Control Stereo Receiver

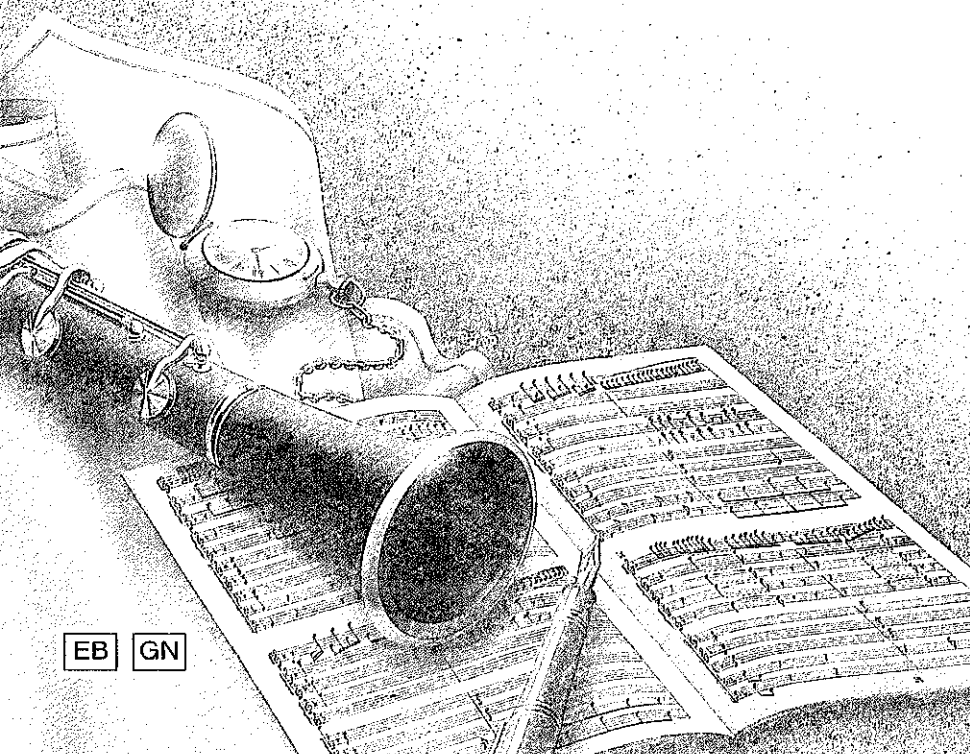
SA-DX930

Operating Instructions

Technics®



The photographs show the model for the United Kingdom.



Note:

The "EB" indication shown on the packing case indicates United Kingdom.

Before connecting, operating or adjusting this product, please read these instructions completely. Please save this manual.

EB GN

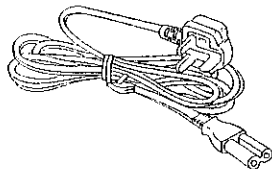
RQT5019-B

Supplied accessories

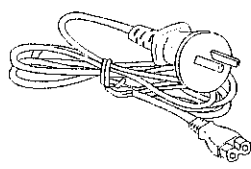


Please check and identify the supplied accessories.

- ☐ AC mains lead (1 pc.)



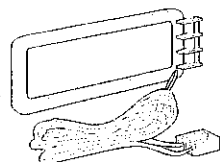
For the United Kingdom
(RJA0038-1U)



For Australia and N.Z.
(RJA0035-A)

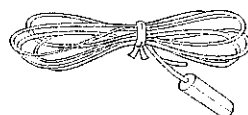
- ☐ AM loop antenna set

- AM loop antenna (1 pc.)
- AM loop antenna holder (1 pc.)
- Screw (1 pc.)



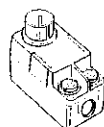
(RSA0010)

- ☐ FM indoor antenna (1 pc.)



(RSA0007)

- ☐ Antenna plug (1 pc.)



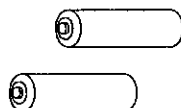
Only for Australia and N.Z.
(RFE0014)

- ☐ Antenna plug adapter (1 pc.)



Only for the United Kingdom
(SJP9009)

- ☐ Batteries (2 pcs.)



- ☐ Remote control transmitter (1 pc.)



(EUR646497)

Use numbers indicated in parentheses when asking for replacement parts.

Dear Customer

Thank you for purchasing this product.

For optimum performance and safety, please read these instructions carefully.

These operating instructions are applicable to models for the United Kingdom, Australia and N.Z., however, are intended primarily for the United Kingdom model.

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Caution for AC Mains Lead

(For United Kingdom)

("EB" area code model only)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience. A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362. Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced. If you lose the fuse cover the plug must not be used until a replacement cover is obtained. A replacement fuse cover can be purchased from your local dealer.

CAUTION!

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral, Brown: Live.

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.

The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL $\perp$ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

Before use

Remove the connector cover.

How to replace the fuse

The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below. Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.

Figure A

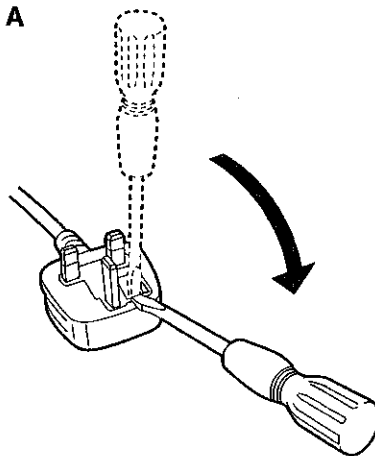
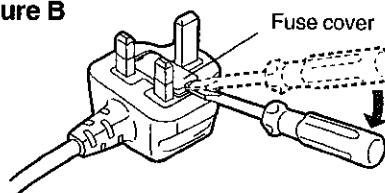


Figure B



2. Replace the fuse and close or attach the fuse cover.

Figure A

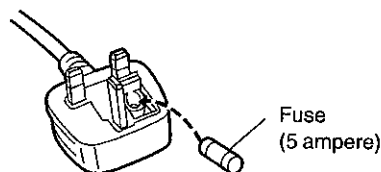
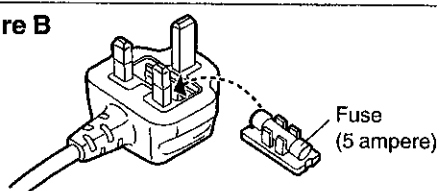


Figure B



Before use

Placement

Avoid placing the unit in areas of:

- direct sunlight
- high temperature
- high humidity
- excessive vibration
- uneven surfaces (Place the unit on a flat level surface.)

Such conditions might damage the cabinet and/or other component parts and thereby shorten the unit's service life.

Stacking

Never place heavy items on top of the unit or the AC power cord.

Voltage

- It is very dangerous to use an AC power source of high voltage such as for an air conditioner.
A fire might be caused by such a connection.
- A DC power source can not be used.
Be sure to check the power source carefully, especially if on a ship or other place where DC is used.

Power cord protection

- Avoid cuts, scratches or poor connection of the AC power cord, as this may result in fire or electric shock.
Excessive bending, pulling or slicing of the cord should also be avoided.
- Do not pull on the cord when you are disconnecting the power, as this could cause an electric shock. Grasp the plug firmly when you disconnect the power supply.
- Never touch the plug with wet hands or a serious electric shock could result.

Foreign materials

- Ensure that no foreign objects, such as needles, coins, screwdrivers etc., accidentally fall into the unit.
Otherwise, a serious electric shock or malfunction could occur.
- Be extremely careful about spilling water or liquid on/into the unit, as a fire or electric shock could occur.
(Disconnect the power plug and contact your dealer immediately if this occurs.)
- Avoid spraying insecticides onto the unit as they contain flammable gases which can be ignited.
- Insecticides, alcohol, paint thinner and similar chemicals should never be used to clean the unit as they can cause flaking or cloudiness to the cabinet finish.

Service

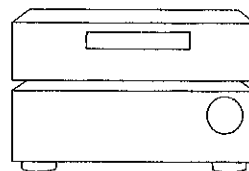
- Never attempt to repair, disassemble or reconstruct the unit if there seems to be a problem.
A serious electric shock could result if you ignore this precautionary measure.
- If a problem occurs during operation (the sound is interrupted, indicators fail to light up, smoke is detected, etc.) contact your dealer or Authorized Service Center immediately.
- Disconnect the power supply if the unit will not be used for a long time. Otherwise the operation life could be shortened.

CAUTION!

DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT IN CABINET OR IN ANOTHER CONFINED SPACE IN ORDER TO KEEP WELL VENTILATED CONDITION. ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION CONDITION TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING.

CAUTION

Do not place a tape deck, CD, or DVD player on top of this unit.
Heat radiated from the top of this unit may cause damage to the software.



NO

Surround guide

You are able to enjoy these surround systems with this receiver.

Surround system

Dolby Pro Logic

Dolby Pro Logic is a decoding system that was developed to get a better sense of presence from sources encoded with Dolby Surround. The feeling of position has been improved by the addition of a separate center speaker channel. Dolby Surround was developed to allow enjoyment of Dolby Stereo, a cinema system, in private homes. This system reproduces sound close to that of the original movie through use of an analog matrix.

(⇒ Page 30.)

Software

- Video tapes
- Laser discs
- DVDs
- CDs

Software encoded with Dolby Surround can be identified with this mark.



Dolby Digital (AC-3)

Dolby Digital is a discrete 6 (5.1) channel digital surround system developed for cinema use. The sound signals in Dolby Digital format are compressed to 1/12 their original size, allowing an entire movie to be recorded on a single DVD. Not all Dolby Digital sources are recorded with 6 channels. Some sources marked Dolby Digital may be recorded in Dolby Surround, a 2 channel system.

(⇒ Page 30.)

- DVDs

Software encoded with Dolby Digital can be identified with this mark.



DTS

DTS is a discrete 6 (5.1) channel digital surround system developed for cinema use. Sources encoded in DTS are only compressed to a quarter of the size of the original to preserve sound quality.

DTS sources are produced with the intention that all speaker channels will be used.

(⇒ Page 30.)

- DVDs
- Laser discs
- CDs

Software encoded with DTS can be identified with this mark.



SFC (Sound Field Control)

Only for Australia and N.Z.

The receiver itself produces the surround effects with sources other than those listed above. Various effects, like a concert hall or jazz club, can be achieved by introducing width or reverberation to the original sound.

(⇒ Page 31.)

Any kind, but particularly music CDs and video tapes.

Before use

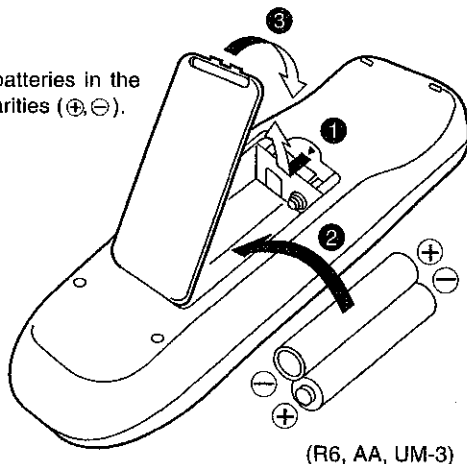
Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories. Confidential Unpublished Works. © 1992-1997 Dolby Laboratories, Inc. All rights reserved.

Manufactured under license from Digital Theater Systems, Inc. "DTS" and "DTS Digital Surround" are trademarks of Digital Theater Systems, Inc. © 1996 Digital Theater Systems, Inc. All rights reserved.

Concerning the remote control

A

Insert the batteries in the correct polarities (+, -).



(R6, AA, UM-3)

Battery installation

Use of batteries

- Do not mix old and new batteries, or batteries of different types (manganese and alkaline, etc.).
- Never subject batteries to excessive heat or flame; do not attempt to disassemble them; and be sure they are not short-circuited.
- If the remote control is not to be used for a long period of time, remove the batteries and store them in a cool, dark place.
- Do not attempt to recharge alkaline or manganese batteries.
- Do not use rechargeable type batteries.

Correct method of use

Operation notes

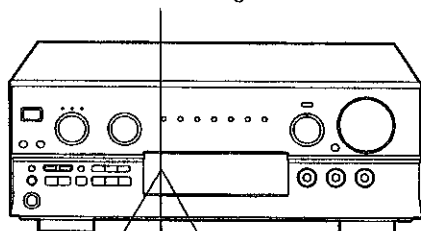
- Do not place obstacles between the remote control signal sensor and remote control unit.
- Do not expose the remote control signal sensor to direct sunlight or to the bright light of an inverter fluorescent light.
- Take care to keep the remote control signal sensor and end of the remote control unit free from dust.
- If the unit is installed in a rack with glass doors, the glass doors' thickness or color might make it necessary to use the remote control a shorter distance from the unit.

To prevent damage

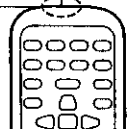
- Never place heavy items on top of the unit.
- Do not disassemble or reconstruct the unit.
- Do not spill water or other liquids into the unit.

B

Remote control signal sensor

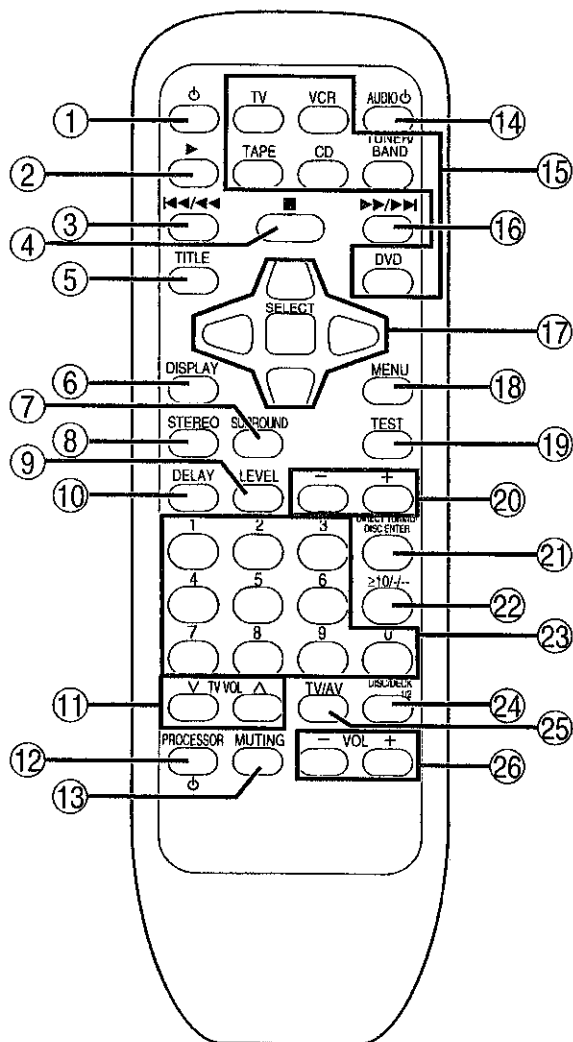


Transmission window



About 7 meters in front of the signal sensor. (The actual range will depend on the angle at which the remote control is used.)

Front panel controls

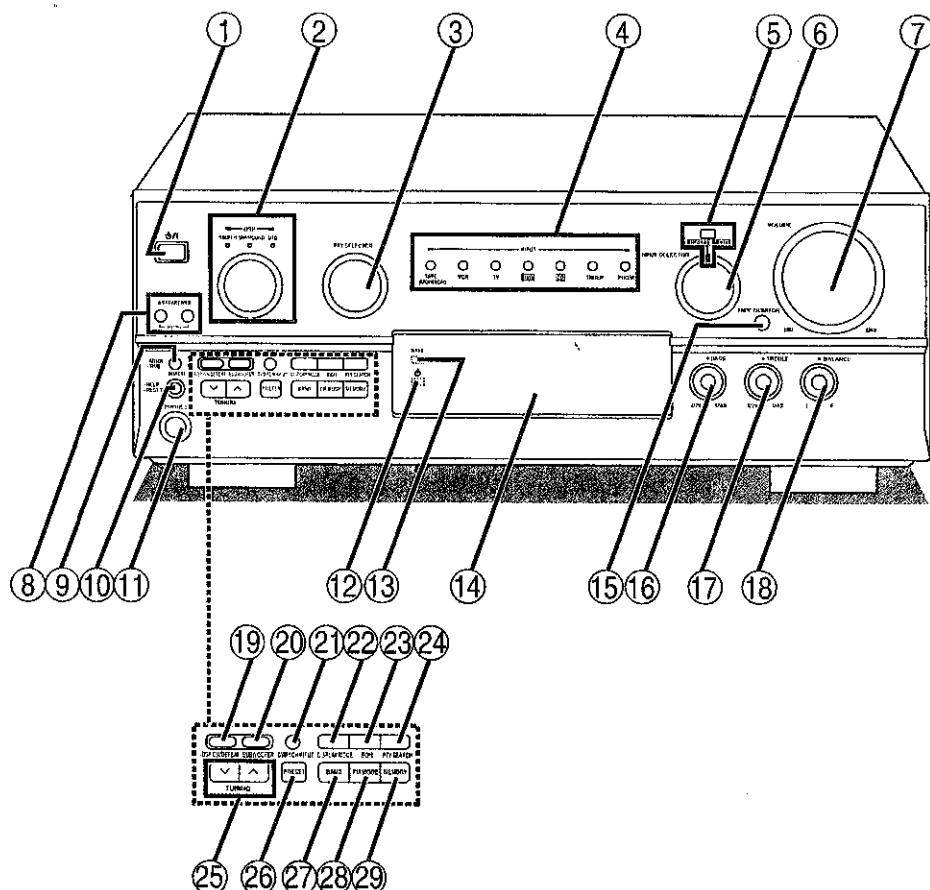


Remote control

The pages referred to on this page are in the booklet "How to use the remote control transmitter." The page numbers in boxes (eg. 32) refer to pages in this manual.

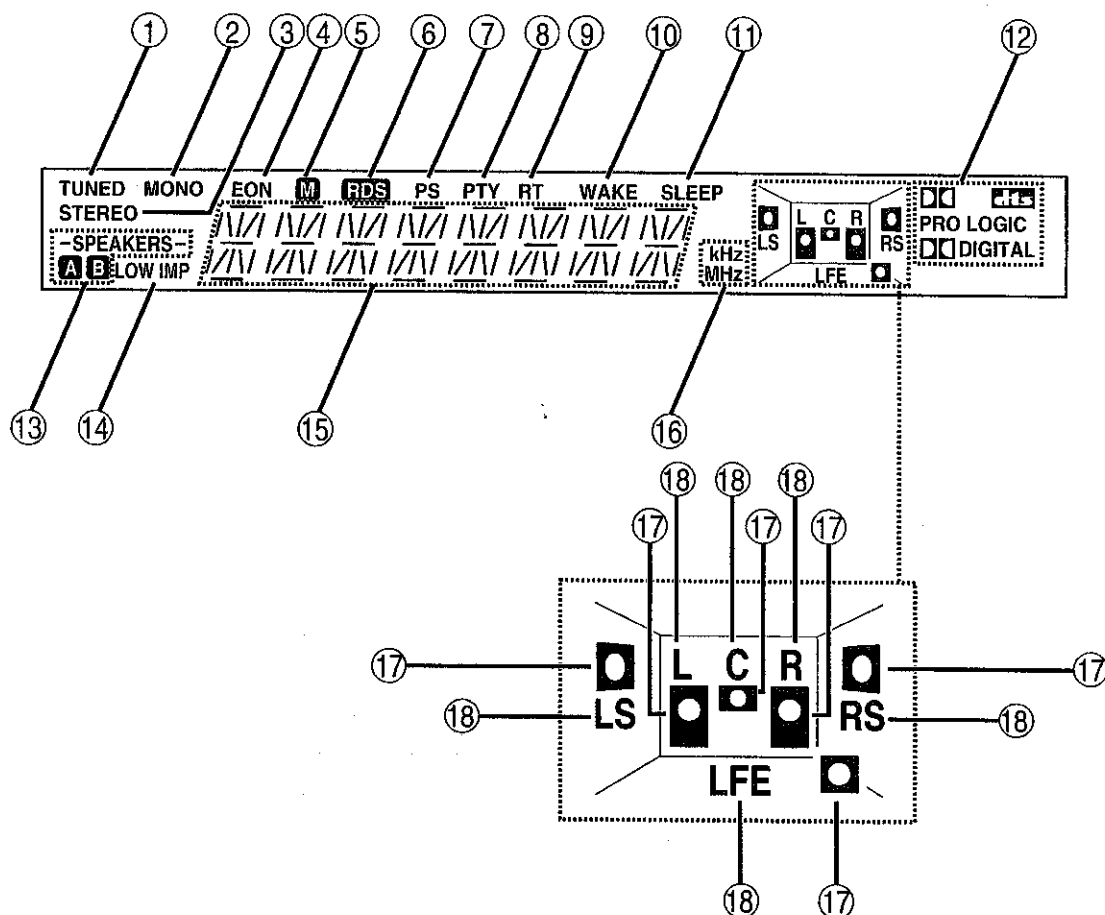
No.	Name	Ref. page
①	Standby/on button (⏻)	2
②	▶ button (▶)	5
③	◀◀/◀◀ button (◀◀/◀◀)	5
④	■ button (■)	5
⑤	Title button (TITLE)	Back cover
⑥	Display button (DISPLAY)	Back cover
⑦	Surround mode select button (SURROUND)	4, 32
⑧	Stereo mode select button (STEREO)	4
⑨	Speaker channel select button (LEVEL)	4, 32
⑩	Delay time button (DELAY)	4, 33
⑪	TV volume buttons (V TV VOL ^)	7
⑫	Processor standby/on button (PROCESSOR ⏻)	6
⑬	Muting button (MUTING)	2, 37
⑭	Audio standby button (AUDIO ⏻)	2
⑮	Input select buttons (TV, VCR, TAPE, CD, TUNER/BAND, DVD)	2
⑯	▶▶/▶▶ button (▶▶/▶▶)	5
⑰	Cursor/select buttons	Back cover
⑱	Menu button (MENU)	Back cover
⑲	Test button (TEST)	4, 32
⑳	Delay time/level adjust buttons (-, +)	4, 32
㉑	Direct tuning/disc enter button (DIRECT TUNING/DISC ENTER)	5, 23
㉒	>10/-/- button (>10/-/-)	5
㉓	Numeric buttons	5, 23
㉔	Disc/deck 1/2 select button (DISC/DECK 1/2)	5
㉕	TV/AV select button (TV/AV)	7
㉖	Volume buttons (-VOL+)	2, 32

Before use



Main unit

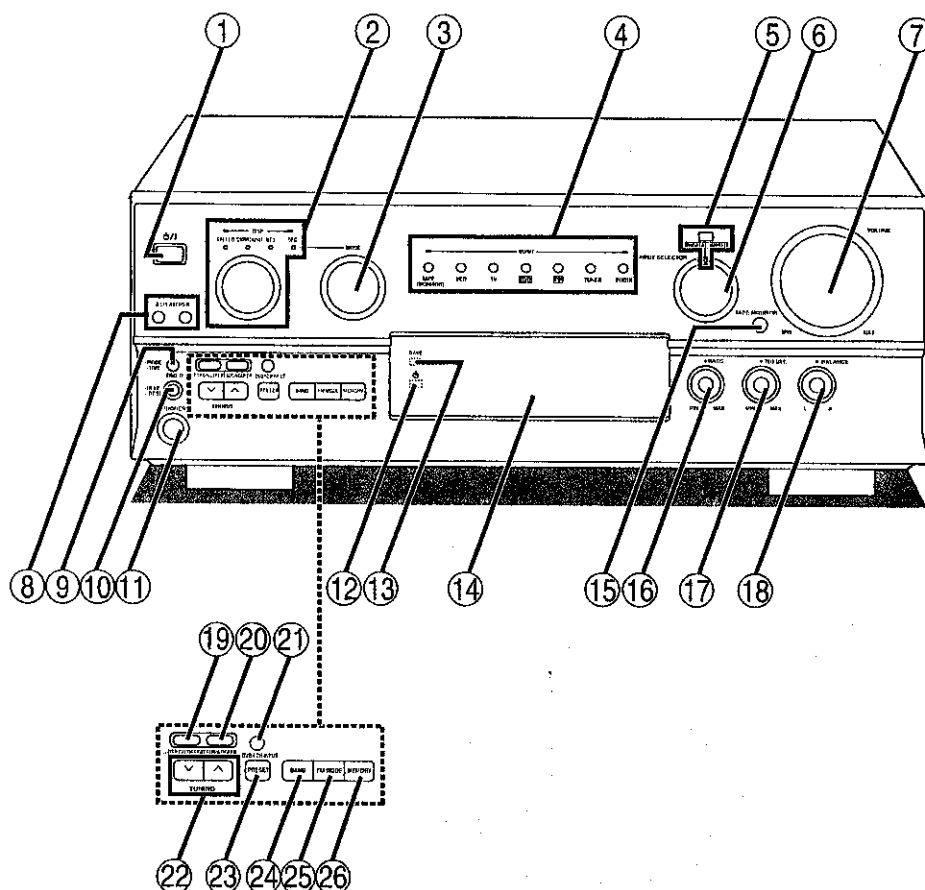
No.	Name	Ref.page	No.	Name	Ref.page
①	Standby/on switch ($\odot/\text{I}$)	18	⑬	Wake indicator (WAKE)	39
	Press to switch the unit from on to standby mode or vice versa.		⑭	Display section	9
	In standby mode, the unit is still consuming a small amount of power.		⑮	Tape monitor button (TAPE MONITOR)	21
②	DSP mode selector (DSP)	30	⑯	Bass control (BASS)	37
③	PTY selector (PTY SELECTOR)	27	⑰	Treble control (TREBLE)	37
④	Input indicator	20	⑱	Balance control (BALANCE)	37
⑤	Digital input select button/indicator (DIGITAL INPUT)	20	⑲	Digital signal processor on/defeat button (-DSP ON/DEFEAT)	22, 30
⑥	Input selector (INPUT SELECTOR)	20	⑳	Subwoofer button (SUBWOOFER)	19, 37
⑦	Volume control (VOLUME)	20	㉑	DVD 6CH INPUT select button (DVD 6CH INPUT)	36
⑧	Speaker select buttons (A SPEAKERS B)	18, 20	㉒	RDS display mode select button (DISPLAY MODE)	26
⑨	Timer button (TIMER, -MODE, -TIME)	39	㉓	EON button (EON)	28
⑩	Help/reset button (-HELP, -RESET)	41	㉔	PTY search button (PTY SEARCH)	27
⑪	Headphones jack (PHONES)	37	㉕	Tuning buttons (TUNING $\vee$, $\wedge$)	22
⑫	Standby indicator ($\odot$)		㉖	Preset channel button (PRESET)	25
	When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.		㉗	Band select button (BAND)	22
			㉘	FM mode select button (FM MODE)	22
			㉙	Memory button (MEMORY)	24



Display section

No.	Name	Ref.page
①	Tuned indicator (TUNED)	22
②	Monaural indicator (MONO)	22
③	Stereo indicator (STEREO)	22
④	EON indicator (EON)	28
⑤	Memory indicator (M)	24
⑥	RDS indicator (RDS)	26
⑦	PS indicator (PS)	26
⑧	PTY indicator (PTY)	26
⑨	RT indicator (RT)	26
⑩	Wake indicator (WAKE)	39
⑪	Sleep indicator (SLEEP)	39
⑫	Surround format indicators (PRO LOGIC, DIGITAL)	30
⑬	Front speaker indicator (-SPEAKERS-)	20

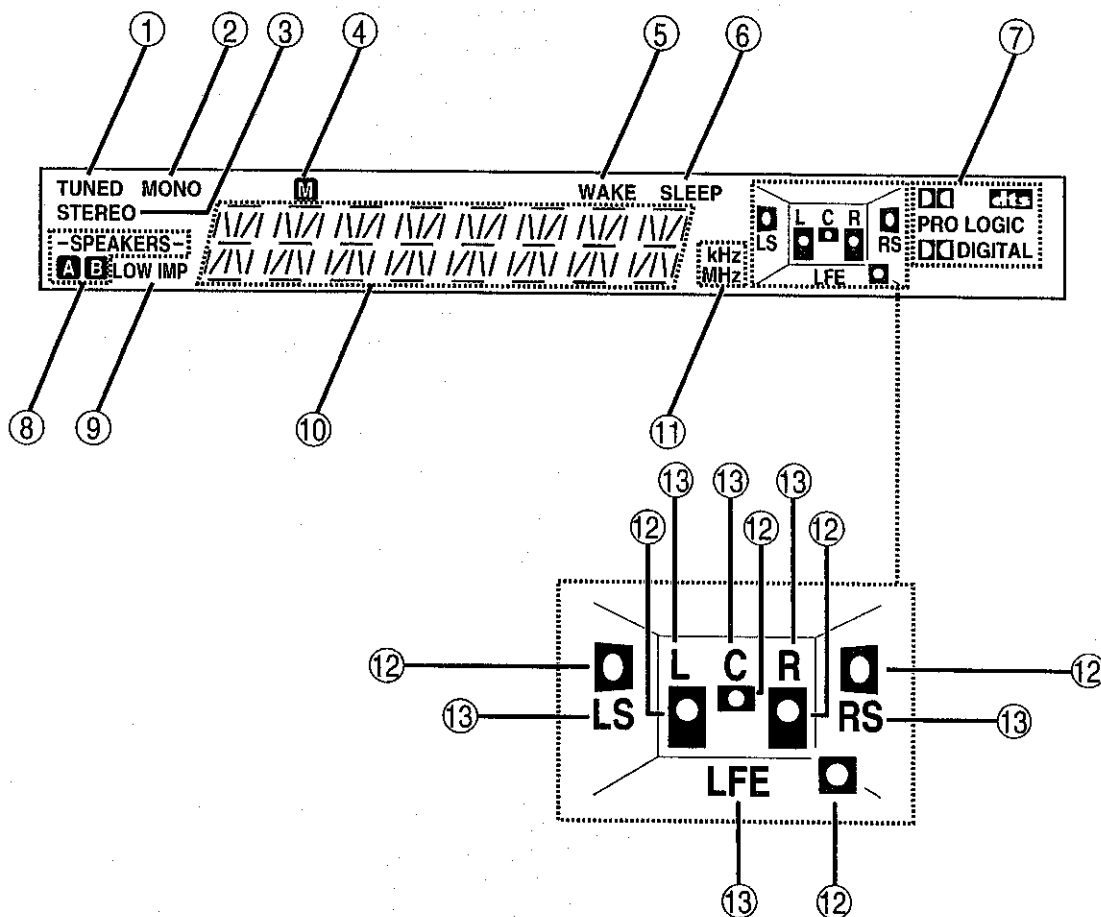
No.	Name	Ref.page
⑭	Low impedance indicator (LOW IMP)	21
⑮	Display	
⑯	Frequency unit indicator (kHz, MHz)	22
⑰	Speaker indicators	19
⑱	Signal format indicators (L, C, R, LS, RS, LFE)	
These indicators light up to indicate each input signal format.		
L: Front channel (left)		
C: Center channel		
R: Front channel (right)		
LS: Surround channel (left)		
RS: Surround channel (right)		
"LFE" (Low Frequency Effect) is a channel for the deep-bass effect in the low frequency range.		



Main unit

No.	Name	Ref. page
①	Standby/on switch (⏻/⏻)	18
	Press to switch the unit from on to standby mode or vice versa.	
	In standby mode, the unit is still consuming a small amount of power.	
②	DSP mode selector (DSP)	30
③	SFC mode selector (MODE)	31
④	Input indicator	20
⑤	Digital input select button/indicator (DIGITAL INPUT)	20
⑥	Input selector (INPUT SELECTOR)	20
⑦	Volume control (VOLUME)	20
⑧	Speaker select buttons (A SPEAKERS B)	18, 20
⑨	Timer button (TIMER, -MODE, -TIME)	39
⑩	Help/reset button (-HELP, -RESET)	41
⑪	Headphones jack (PHONES)	37
⑫	Standby indicator (⏻)	
	When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.	

No.	Name	Ref. page
⑬	Wake indicator (WAKE)	39
⑭	Display section	11
⑮	Tape monitor button (TAPE MONITOR)	21
⑯	Bass control (BASS)	37
⑰	Treble control (TREBLE)	37
⑱	Balance control (BALANCE)	37
⑲	Digital signal processor on/defeat button (-DSP ON/DEFEAT)	22, 30
⑳	Subwoofer button (SUBWOOFER)	19, 37
㉑	DVD 6CH INPUT select button (DVD 6CH INPUT)	36
㉒	Tuning buttons (TUNING ∇, ∆)	22
㉓	Preset channel button (PRESET)	25
㉔	Band select button (BAND)	22
㉕	FM mode select button (FM MODE)	22
㉖	Memory button (MEMORY)	24



Before use

Display section

No.	Name	Ref.page
①	Tuned indicator (TUNED)	22
②	Monaural indicator (MONO)	22
③	Stereo indicator (STEREO)	22
④	Memory indicator (M)	24
⑤	Wake indicator (WAKE)	39
⑥	Sleep indicator (SLEEP)	39
⑦	Surround format indicators (DTS, PRO LOGIC, DIGITAL)	30
⑧	Front speaker indicator (-SPEAKERS- A B)	20
⑨	Low impedance indicator (LOW IMP)	21
⑩	Display	
⑪	Frequency unit indicator (kHz, MHz)	22

No.	Name	Ref.page
⑫	Speaker indicators	19
⑬	Signal format indicators (L, C, R, LS, RS, LFE)	
	These indicators light up to indicate each input signal format.	
	L: Front channel (left)	
	C: Center channel	
	R: Front channel (right)	
	LS: Surround channel (left)	
	RS: Surround channel (right)	

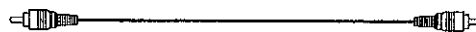
"LFE" (Low Frequency Effect) is a channel for the deep-bass effect in the low frequency range.

Connecting analog equipment

Stereo phono cable (not included)

White (L)  Red (R) 

Video connection cable (not included)

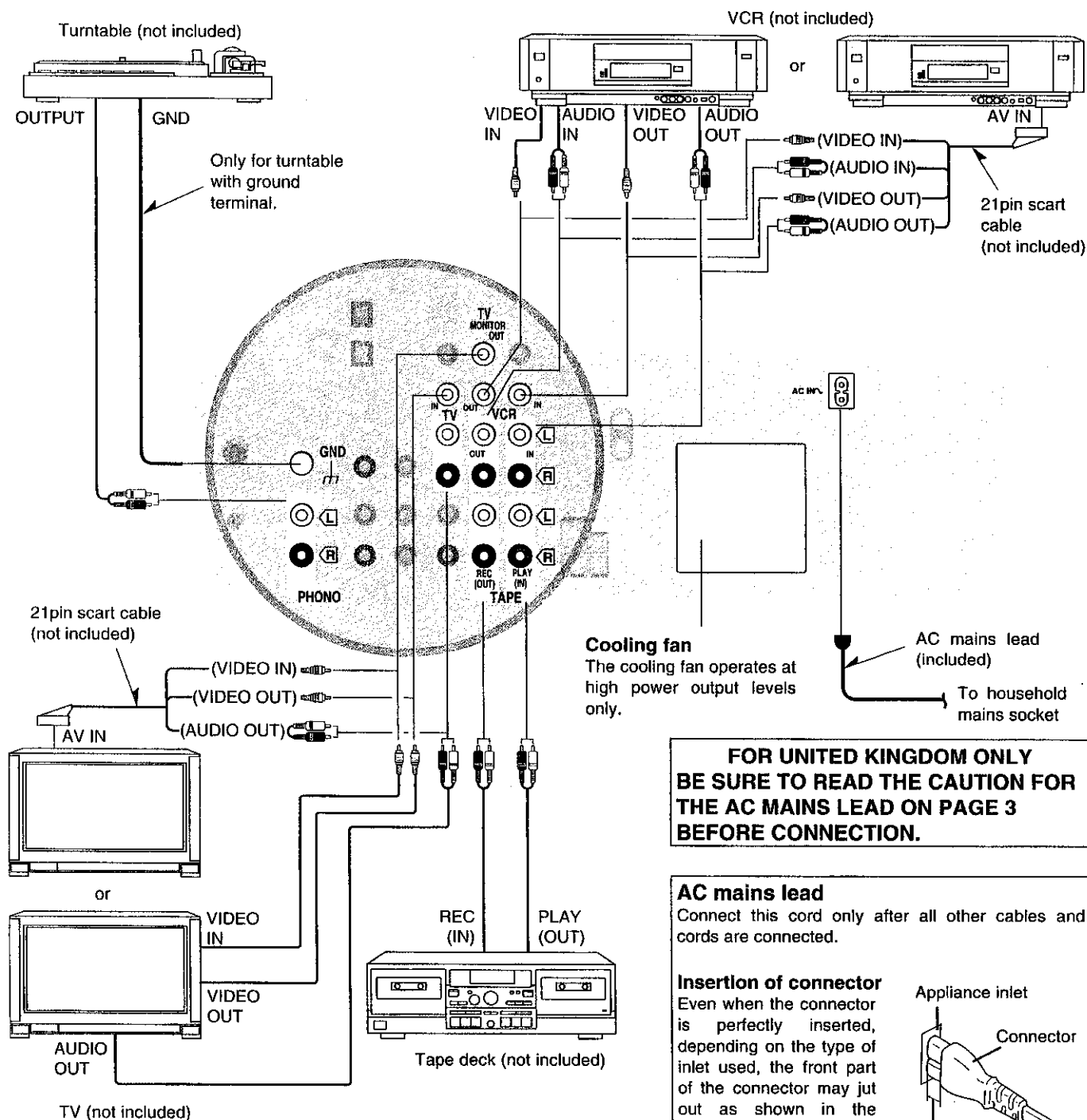


Make sure that the power supply for all components has been turned off before making any connections.

To connect equipment, refer to the appropriate operating instructions.

Note

Do not place books, etc., on the top of this unit or block the heat radiation vents in any way.



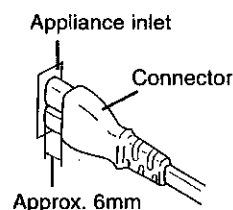
FOR UNITED KINGDOM ONLY
BE SURE TO READ THE CAUTION FOR
THE AC MAINS LEAD ON PAGE 3
BEFORE CONNECTION.

AC mains lead

Connect this cord only after all other cables and cords are connected.

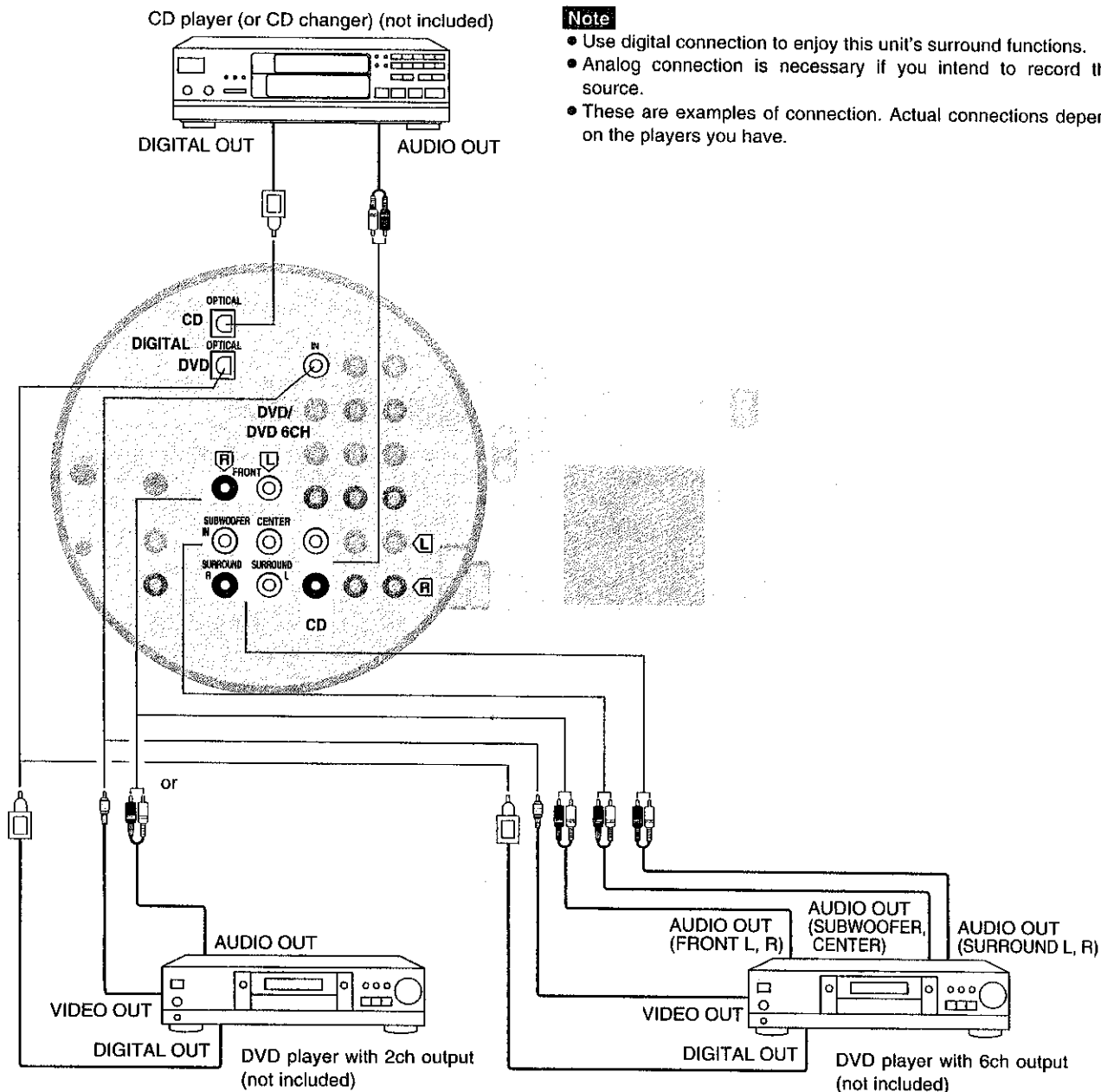
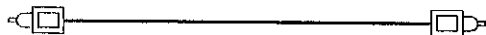
Insertion of connector

Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing. However there is no problem using the unit.



Connecting digital equipment

Optical fiber cable (not included)

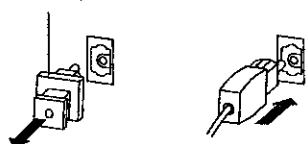


Note

- Use digital connection to enjoy this unit's surround functions.
- Analog connection is necessary if you intend to record the source.
- These are examples of connection. Actual connections depend on the players you have.

Optical fiber cable connections

Dust cap

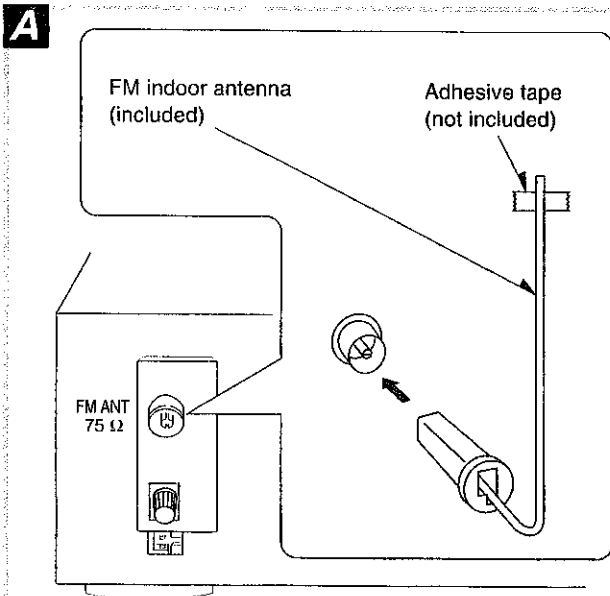


- Do not bend the optical fiber cable.
- Attach the dust caps when the optical terminals are not in use.

Note

Dolby Digital RF (radio frequency) signals cannot be decoded with this unit.

Antenna connections



FM indoor antenna (included)

This antenna is normally sufficient for reception of FM broadcasts.

Attach to a wall (using tape) facing in the direction of best reception.

For best reception

An FM outdoor antenna is recommended.

FM outdoor antenna (not included)

An outdoor antenna should be used when using this unit in mountainous areas or in spaces enclosed by reinforced concrete where the FM indoor antenna (included) does not provide satisfactory reception.

Disconnect the FM indoor antenna if an FM outdoor antenna is installed.

Note

An outdoor antenna should be installed by a qualified technician only.

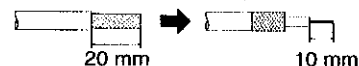
How to use the antenna plug (included)

Only for Australia and N.Z.

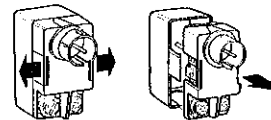
Two types of wire are most commonly used for connection from the antenna: 300 Ω parallel feeder wire or 75 Ω coaxial cable. For best resistance to outside interference, the use of 75 Ω coaxial cable is suggested.

To connect a 75 Ω coaxial cable

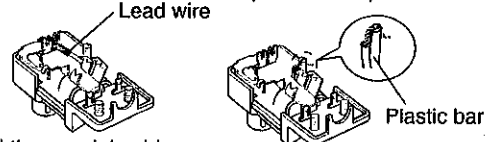
- 1 Remove a piece of the outer vinyl insulator.



- 2 Carefully pull the tabs apart to remove the cover.

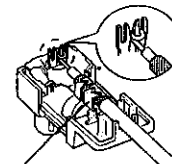


- 3 Remove the lead wire and clamp it with the plastic bar.



- 4 Install the coaxial cable.

Clamp the cable conductor, and wind it on so that it doesn't contact anything else.

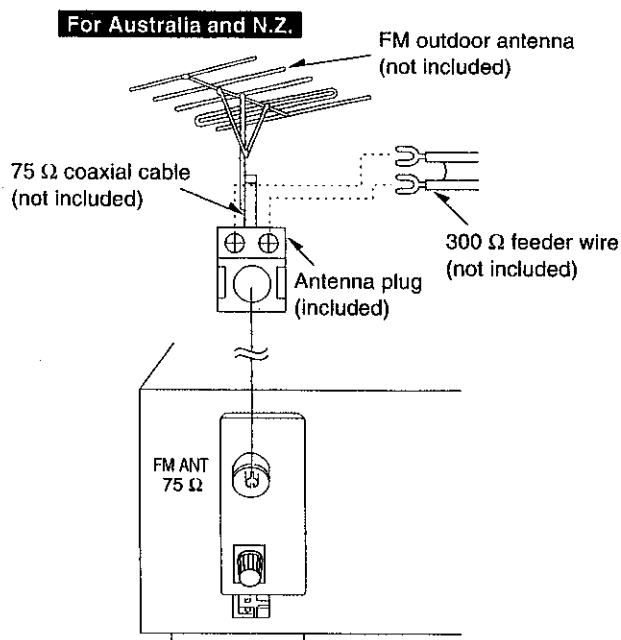
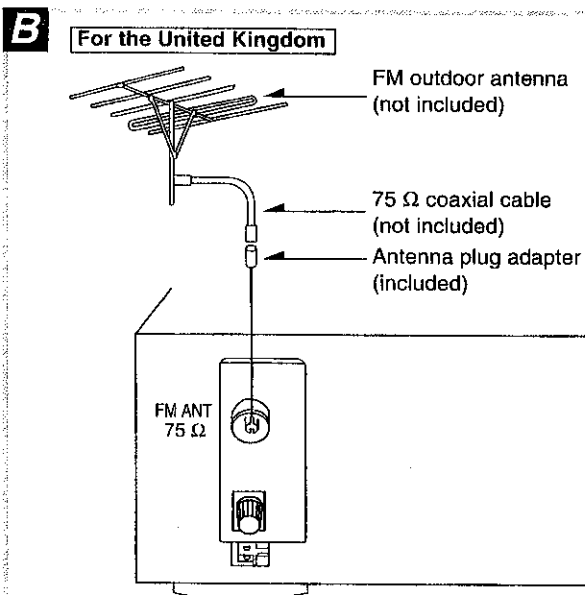
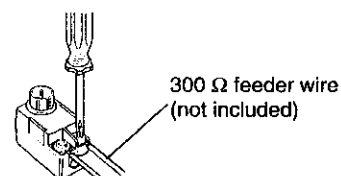


Press down with pliers.

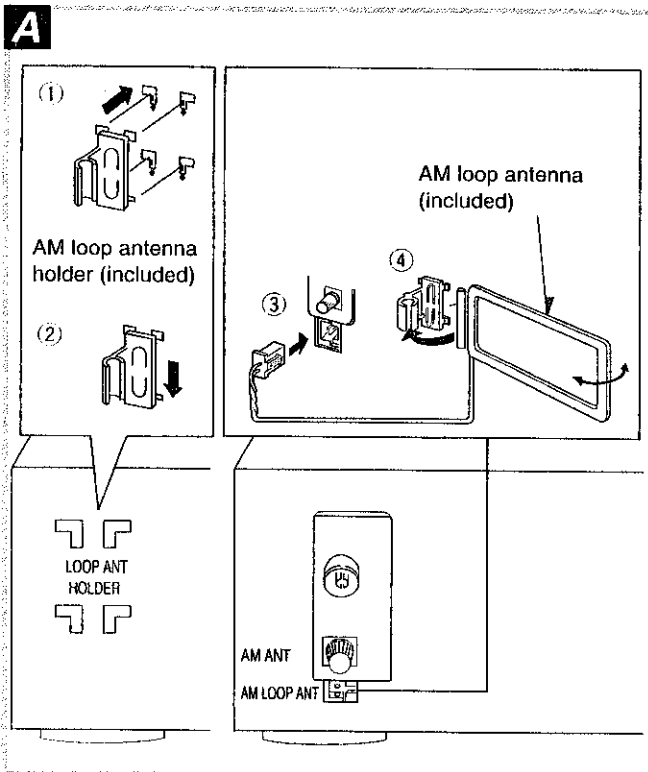
- 5 Attach the cover.

To connect a 300 Ω feeder wire

Loosen the screws, connect the wires, and tighten the screws to secure the connection.



Antenna connections



AM loop antenna (included) **A**

This antenna is normally sufficient for reception of AM broadcasts.

Fit the AM loop antenna holder (included) onto the rear panel of this unit and then attach the AM loop antenna to the AM loop antenna holder (facing in the direction of best reception).

Pay attention to the following points when mounting the antenna.

- Do not mount it close to power cords, speaker wires or metal surfaces (doing so will result in noise).
- Do not mount it close to a tape deck. When the tape deck is being used, chirping or beeping sounds may result.

When mounting the antenna to a column, a wall or rack **B**

Mount the antenna so that the hinge is vertical.

AM outdoor antenna (not included) **C**

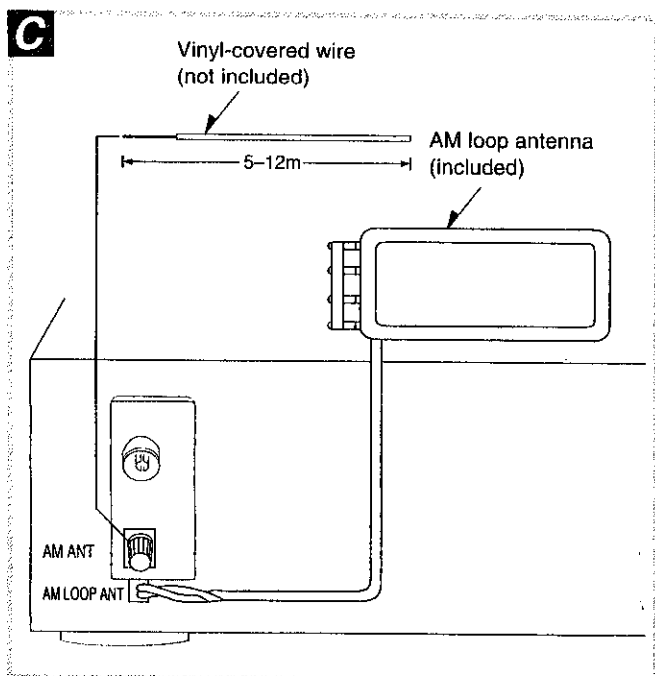
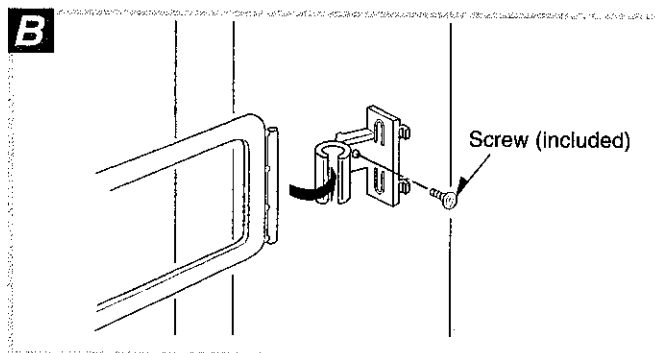
An outdoor antenna should be used when using this unit in mountainous areas or in spaces enclosed by reinforced concrete where the AM loop antenna (included) does not provide satisfactory reception.

Stretch 5–12 m of vinyl-covered wire horizontally across a window frame or other convenient location, keeping it as high as possible from the ground.

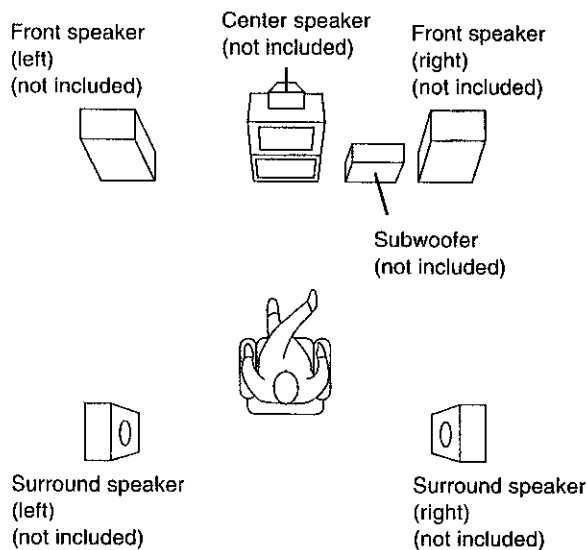
When the unit is not in use, disconnect the outdoor antenna to prevent possible damage that may be caused by lightning. Never use an outdoor antenna during an electrical storm.

Note

Be sure to connect the AM loop antenna even when an outdoor antenna is used.



Placement of speakers



Front speakers

Place the front speakers on the left and right of the TV at seated ear height so that there is good coherency between the picture and sound.

Center speaker

Place this speaker underneath or above the center of the TV. Aim the speaker at the seating area.

Surround speakers

Place these speakers on the side of or slightly behind the listener, and about one meter higher than ear level.

Subwoofer

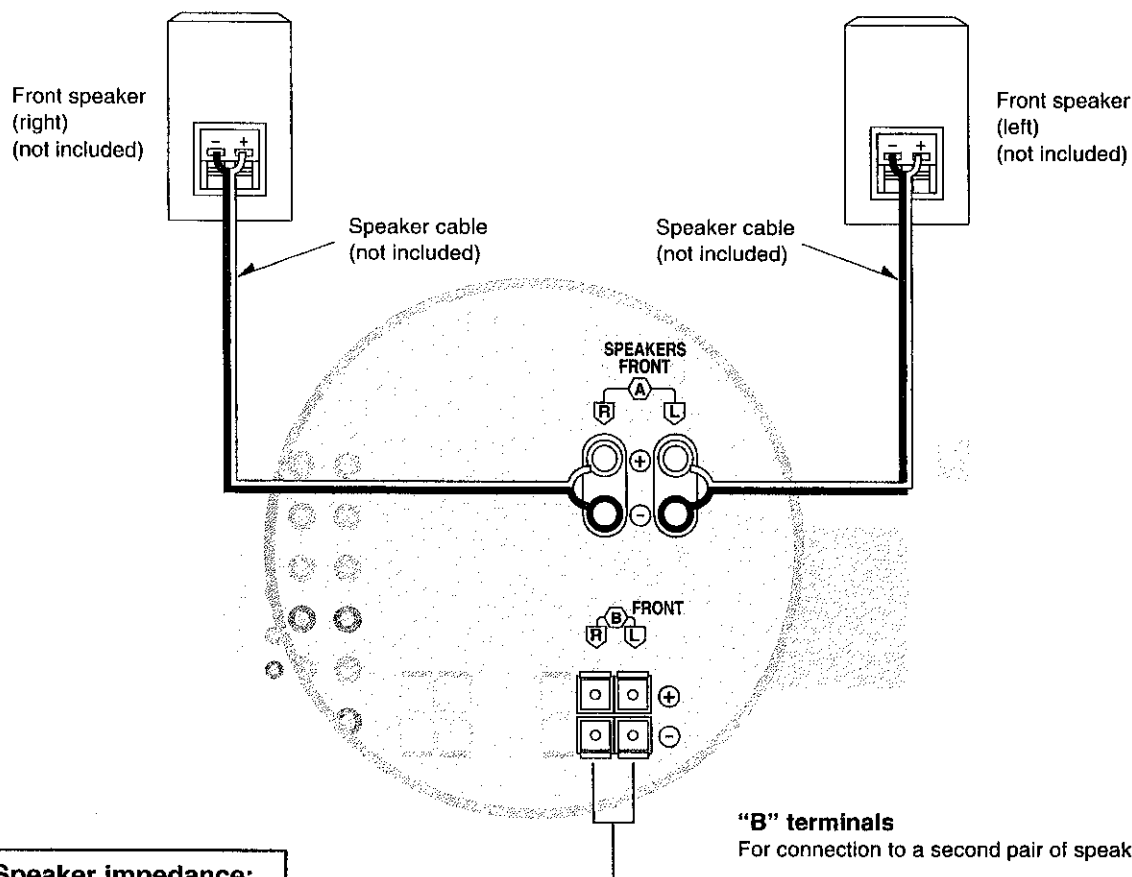
The subwoofer can be placed in any position as long as it is at a reasonable distance from the TV.

Note that some experimentation can yield the smoothest low frequency performance. Placement near a corner can increase the apparent output level, but can result in unnatural bass.

Connecting speakers

Other connections are possible depending on your speaker system. See your speaker system's operating instructions for details.

Front speakers



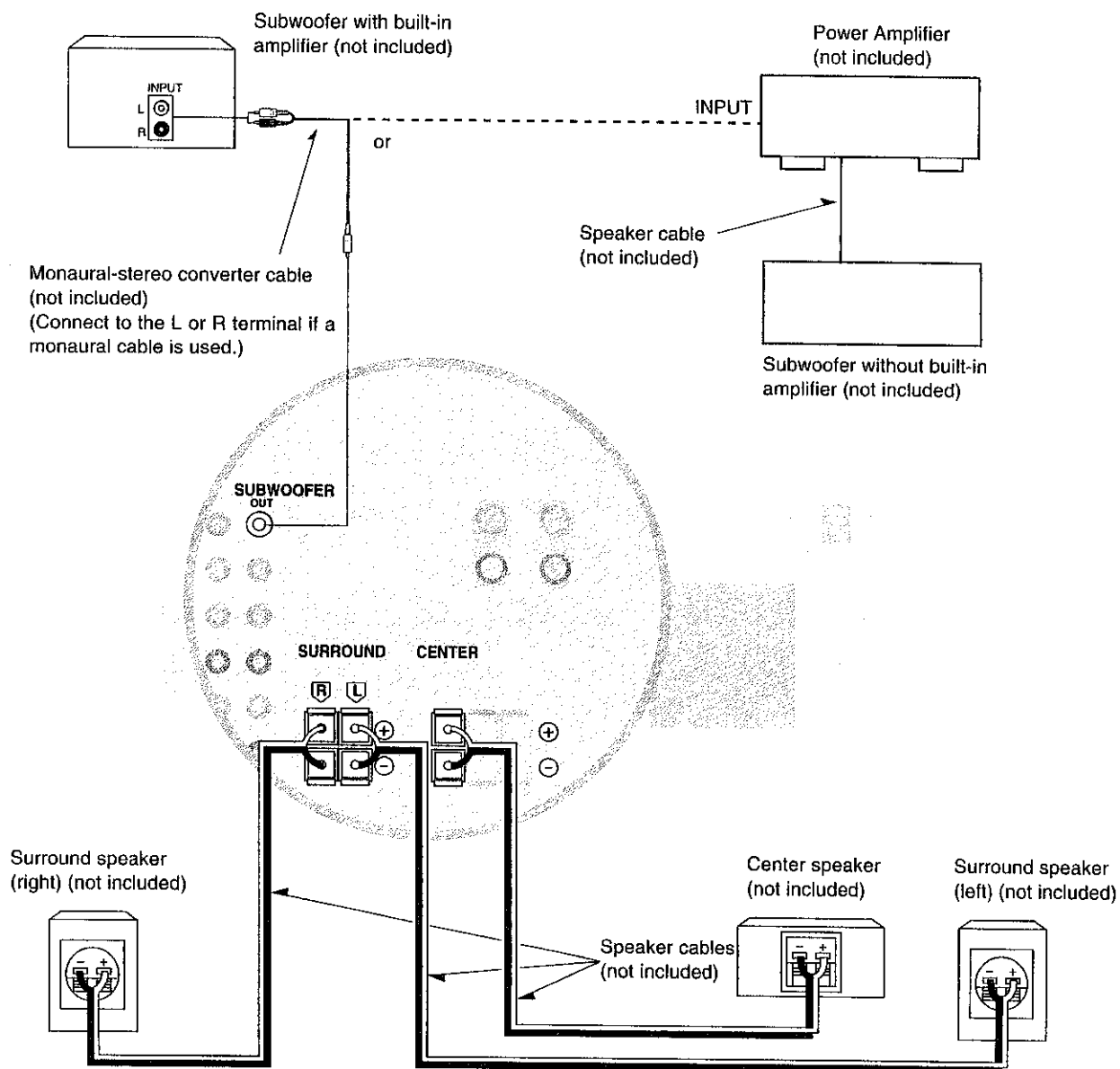
Speaker impedance:

A or B:	4-16 Ω
A and B:	8-16 Ω

Note

Use the A terminals to enjoy Dolby Digital, Dolby Pro Logic, DTS, SFC (only for Australia and N.Z.), and DVD 6CH INPUT mode.

Other speakers



Note

For surround speakers

Do not connect the surround speakers to the front speaker terminals. The surround speakers may be damaged if connected to the front terminals.

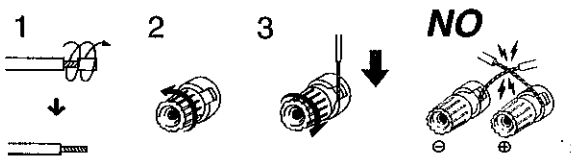
For subwoofer

This receiver has no amplifier section designed especially for the subwoofer.

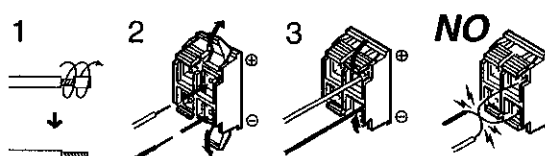
Speaker impedance: Center speaker: 6-16 Ω
Surround speaker: 6-16 Ω

Connecting the cables

(Front "A" terminals)



(For other speaker terminals)



Preparatory steps

Speaker settings

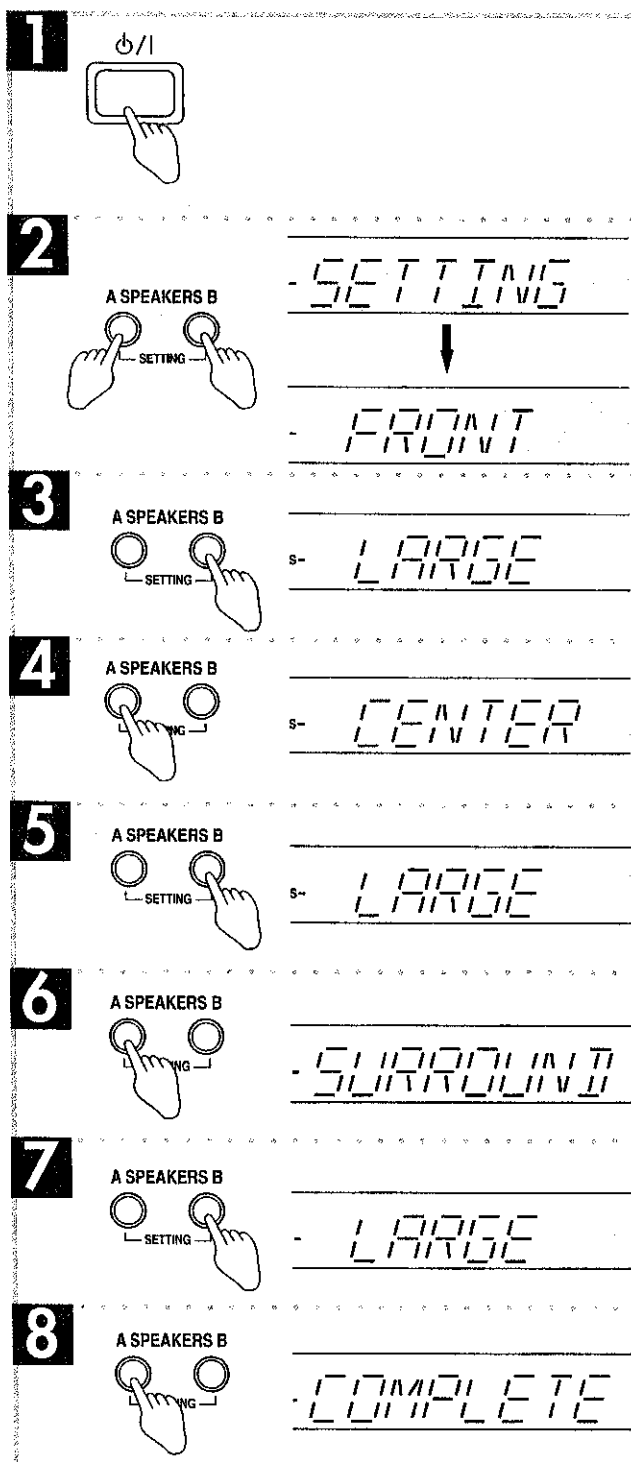
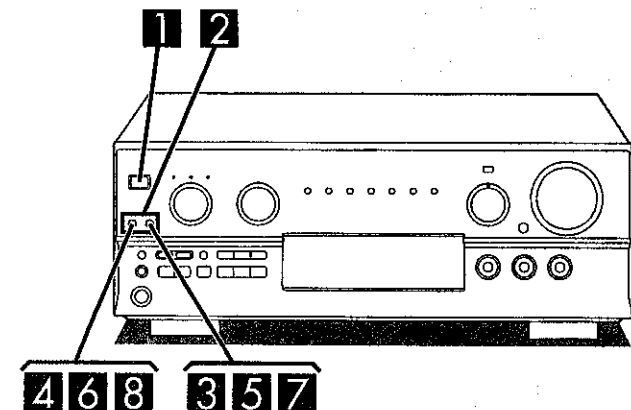
These settings should be done to get the most from the unit's reproduction modes (→ page 30–31).

Front, center, and surround channel settings

Set the type (LARGE or SMALL) and presence of your speakers. Select "LARGE" if the speakers can produce bass (below around 100 Hz). Select "SMALL" if the speakers cannot produce bass. If you aren't using center or surround speakers select "NONE" so the sound is produced through the front speakers.

Before proceeding:

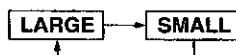
The speaker channels are all set to "LARGE" before shipping. If all your speakers are LARGE, you may skip this operation.



1 Press [⏻/⏻].

2 Press [A] and [B] at the same time.
"SETTING" appears on the display and then changes to "FRONT."

3 Press [B] to set the type of front speakers, "LARGE" or "SMALL."
Each time the button is pressed the display switches as follows.



4 Press [A] to select "CENTER."

5 Press [B] to select the type or presence of the center speaker.
Each time the button is pressed the display switches as follows.



Select "NONE" if a center speaker isn't connected.

6 Press [A] to select "SURROUND."

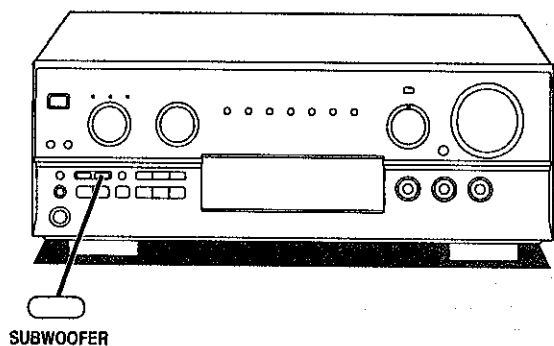
7 Press [B] to select the type or presence of the surround speakers.
Each time the button is pressed the display switches as follows.



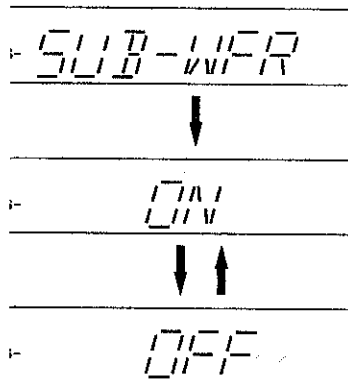
Select "NONE" if surround speakers aren't connected.

8 Press [A] to select "COMPLETE."
The settings are now entered into the unit's memory. The previous display reappears after about 3 seconds. If you have made a mistake in the settings, start again from step 2.

.....
If you allow about 10 seconds to elapse between settings, the procedure is cancelled, all settings are returned to how they were, and the previous display is restored. Begin again if this occurs.

A

SUBWOOFER



Preparatory steps

Subwoofer channel setting **A**

Press [SUBWOOFER] to select "ON" or "OFF."

"SUB-WFR" appears on the display and the current setting, "ON" or "OFF," is shown. Press again to switch between "ON" and "OFF."

ON: select if you are using a subwoofer.

OFF: select if you are not using a subwoofer.

Select "OFF" also when you don't want sound to come from the subwoofer because you are listening to stereo sources.

For your reference:

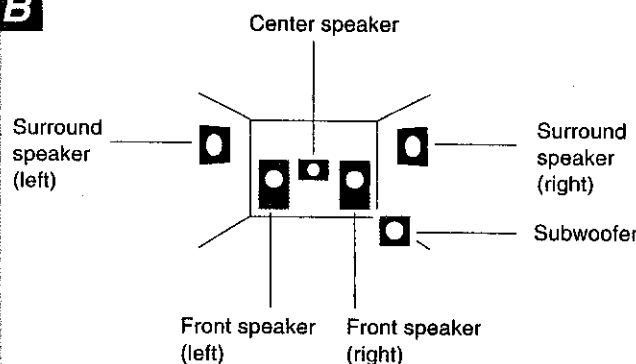
The settings remain as they are until changed by the above procedure, even after the power has been turned off.

The speaker indicators **B**

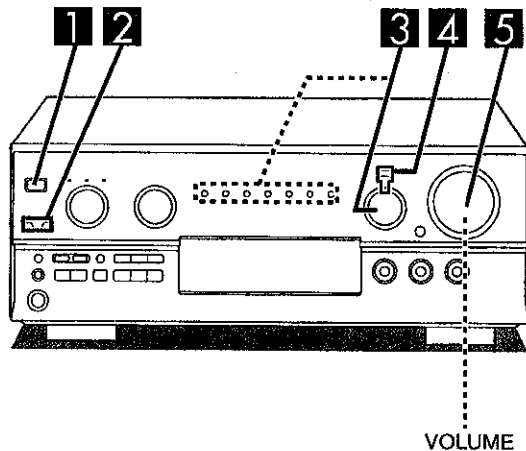
This part of the display indicates which speakers sound is coming from.

If "NONE" or "OFF" is selected during the speaker settings procedure, the corresponding indicators do not light.

The surround and center speaker indicators do not light when STEREO mode is selected (➔ page 30).

B

Basic operations



Before operation, set [VOLUME] to the "MIN" position.

1 Press [ϕ/I].

2 Press [A] and/or [B] to select the speaker system(s) to be used.

A and B refer to the speaker terminals at the rear of the unit.

If the button is pressed once more, the indicator will switch off and no sound will be heard from the speakers.

3 Turn [INPUT SELECTOR] to select and start the desired source.

(Refer to the appropriate operating instructions for details.)

The indicator corresponding to the selected source lights and the source is shown on the display.

TAPE (MONITOR): To listen to cassette tapes

VCR: To watch video tapes

TV: To watch TV

DVD: To watch DVD

CD: To listen to compact discs

TUNER: To listen to radio broadcasts

PHONO: To listen to phono discs

Note

To watch a video (or DVD) or the TV, set the TV to either the TV mode or VIDEO mode.

4 (only if you select CD or DVD in the above step)

Press [DIGITAL INPUT] to select "DIGITAL" or "ANALOG."

Switches between "DIGITAL" and "ANALOG" each time the button is pressed.

The "DIGITAL INPUT" indicator lights when DIGITAL selected.

5 Adjust the volume level.

For your reference

- If the SURROUND, DTS, or SFC (only for Australia and N.Z.) mode has been selected

After displaying the selected source, the display will then change to show the SURROUND, DTS, or SFC mode.

(→ page 30-31)

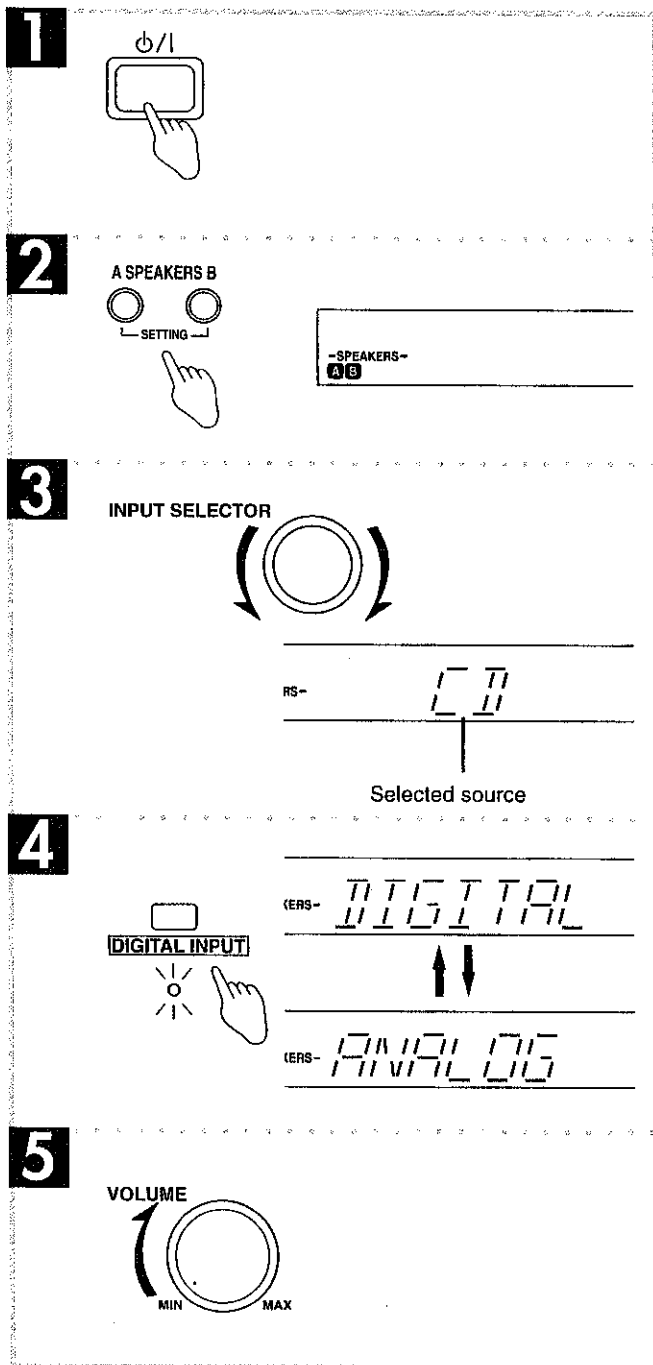
If the source chosen was TUNER then the display will change again to show the frequency.

- If you are using VCR and you select TAPE, CD, TUNER, or PHONO

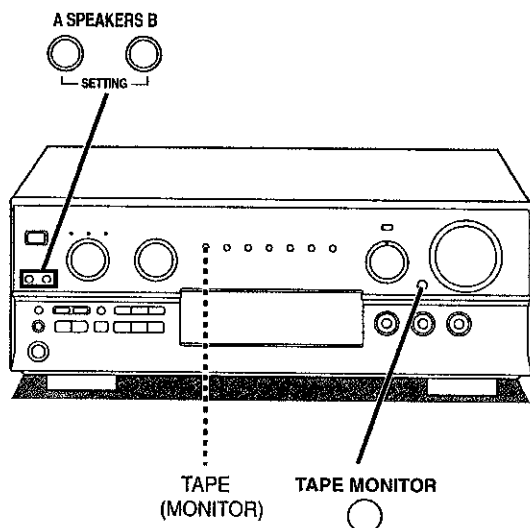
The picture will remain on the screen.

When you finish listening

Be sure to reduce the volume level, and switch the power to the standby condition by pressing [ϕ/I].



Basic operations



For front speakers with an impedance under 6Ω **A**

Press and hold [A] or [B] until "LOW IMP" lights up on the display.

If even one of the speakers being used has an impedance under 6Ω , press and hold down either [A] or [B] for 4 seconds or more to set the impedance on the main unit to LOW.

(Press and hold down once again for 4 seconds or more to turn it off.)

Note that when "LOW IMP" is illuminated, speakers A and B cannot both be used at the same time.

To change a speaker:

e.g. To use speaker B, press [A] ("A" goes out), and then press [B] to activate speaker B.

The TAPE (MONITOR) indicator

This indicator lights in the following two situations:

1. While TAPE is selected.
2. While TAPE MONITOR is in use.

To use the tape monitor **B**

If [TAPE MONITOR] is pressed while a source other than TAPE is selected, the "TAPE (MONITOR)" indicator lights and the tape monitor comes on.

Sources other than tape can still be selected with [INPUT SELECTOR] while the "TAPE (MONITOR)" indicator is on.

Press [TAPE MONITOR] again to turn the tape monitor off.

(⇒ See "Making a recording" on page 38 for details on how to use the tape monitor during recording.)

Note

- The tape monitor cannot be used when DVD or CD digital input is being used.
- If you are using the tape monitor and you select a digital input source, the tape monitor switches off.

Sequential tuning

Use the tuning buttons to tune-in radio stations.

- 1** Turn [INPUT SELECTOR] to select "TUNER."
- 2** Press [BAND] to select "FM" or "AM."
- 3** Press [TUNING (∇ or $\wedge$)] to tune to the desired frequency.
 "TUNED" lights up when tuned.
 "STEREO" lights up when an FM stereo broadcast is received.

To make an automatic search for stations

If [TUNING (∇ or $\wedge$)] is held down for an instant until the frequency begins to scroll, the broadcast stations are tuned in automatically when one is found.

Note

Tuning may stop automatically if any jamming is encountered.

If noise is excessive in the FM stereo mode

Press [FM MODE].
 ("STEREO" will go out, and "MONO" will light up.)

The broadcast will be monaural, but noise will be reduced.
 If the button is pressed once more, the stereo mode resumes.

If there is hissing or thumping while the radio is playing

Press and hold [-DSP ON/DEFEAT] to select "DEFEAT."
 (⇒ Page 30 for details about DSP DEFEAT.)

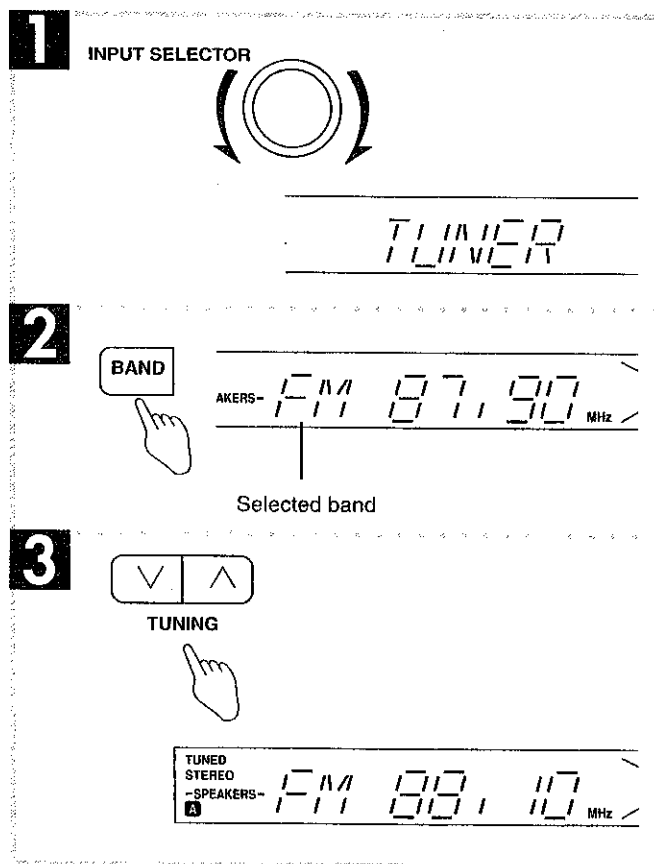
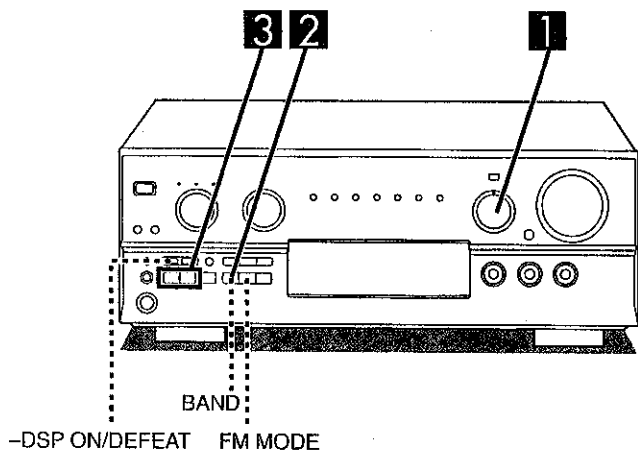
For your reference

The tuner can pick up interference from DVD players. If this occurs turn the DVD player off.

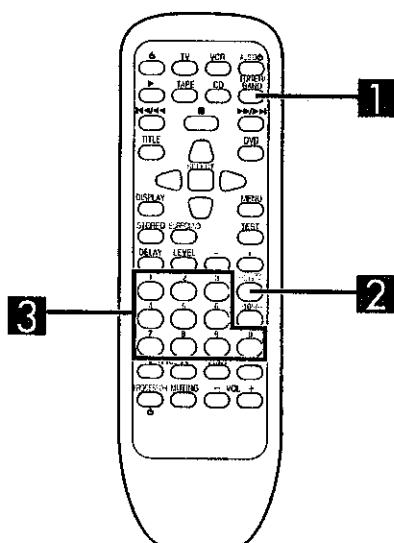
To change the AM frequency step

Press and hold [BAND] for about 3 seconds when AM band is selected. (The frequency step changes from 9 kHz to 10 kHz per step.)

To return to the previous step, press and hold [BAND] for about 3 seconds again.



Listening to radio broadcasts



Direct tuning

by remote control only

Specify the frequency using the numeric buttons on the remote control transmitter to directly tune to the desired station.

1 Press [TUNER/BAND].

This will set the remote control to operate the tuner. The selector on the receiver will change to "TUNER." Each time the button is pressed, the band will change as follows,
FM $\leftrightarrow$ AM.

2 Press [DIRECT TUNING/DISC ENTER].

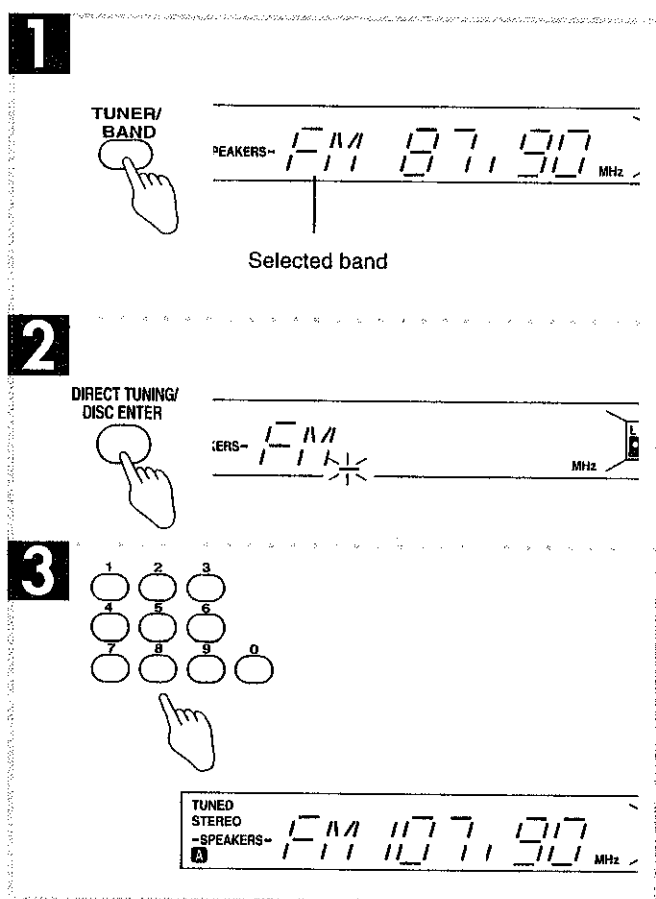
3 While cursor display is flashing (approx. 10 seconds) Press the numeric buttons to enter the frequency.

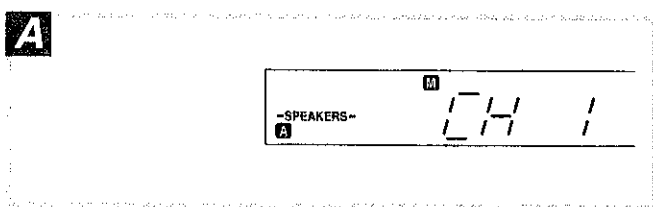
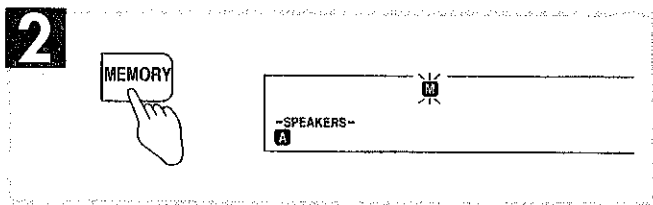
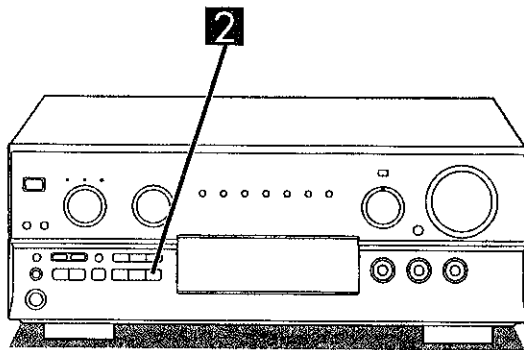
If the desired FM frequency is 107.90 MHz, press
[1] $\rightarrow$ [0] $\rightarrow$ [7] $\rightarrow$ [9] $\rightarrow$ [0].

If the frequency has been input correctly, the displayed frequency will blink once.

Note

1. If no button is pressed while the cursor display is flashing, the display will return to the frequency which is currently being received.
To re-specify the frequency, repeat the procedure from step 2.
2. If the frequency has not been input correctly, "ERROR" will be displayed.
In this case, re-enter the frequency.





Preset tuning

Presetting radio stations into the memory channels of this unit makes selecting stations simple.

A total of 30 FM and AM stations can be preset.

Please remember this

If a new broadcast station is preset into a channel, the setting for the broadcast station which was previously entered in that channel will be automatically erased.

Automatic memory presetting

Automatic memory presetting allows this unit to automatically search for broadcast stations and then preset them into memory. With this method, the channels that can be preset into the memory are set as follows for different bands (FM or AM).

When FM stations are preset,

For FM stations 1–30

When FM and AM stations are preset,

For FM stations 1–20

For AM stations 21–30

1 Set to the frequency from which you want to start automatic memory presetting.

(⇒ Page 22–23.)

2 Press [MEMORY] until the frequency begins to change.

(Automatic memory presetting will start.)

During automatic memory presetting, the memory indicator will flash while the frequency scrolls.

To stop, press [MEMORY] again.

When a broadcast station is preset **A**

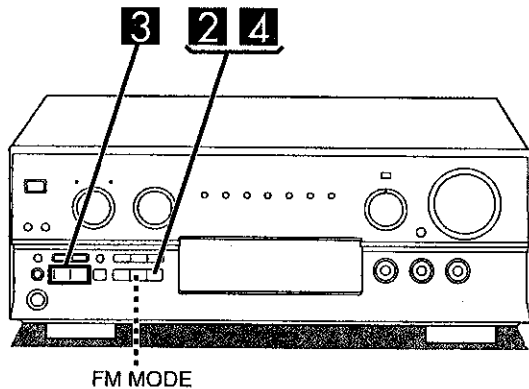
The memory indicator and the preset channel number will be displayed for approximately 1 second.

When presetting is completed

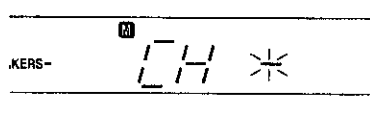
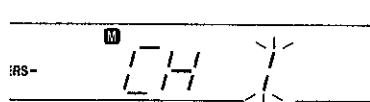
The last broadcast station to be preset will be displayed.

Note

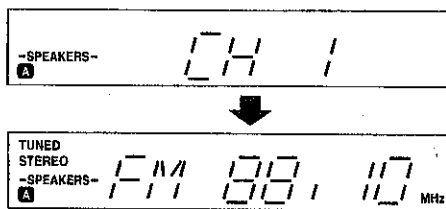
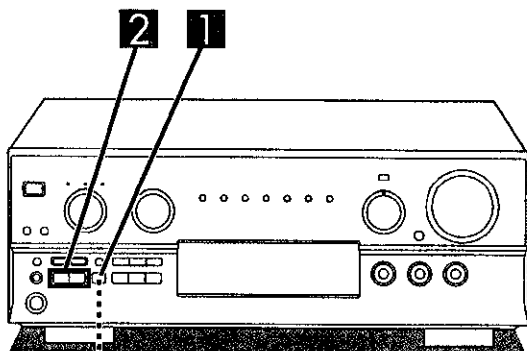
Frequencies may not be preset correctly in cases where the broadcast waves are too strong or too weak. In such cases, carry out presetting manually (⇒ page 25).

A

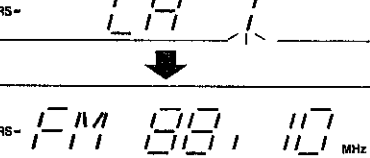
FM MODE

2**3**

TUNING

4**B**

PRESET

1**2**

TUNING

Listening to radio broadcasts

Manual memory presetting **A**

The desired stations can be preset into the desired channels by the user.

- 1 Set to the desired frequency.**
(→ Page 22–23.)

If interference or static is keeping you from enjoying an FM broadcast, press [FM MODE] and change to monaural. You can preset the station in monaural just as in stereo.

- 2 Press [MEMORY].**
To cancel the memory function, press [MEMORY] again.

- 3 Press [TUNING (V or ^)] to select the desired channel.**
Holding the buttons down lets you scroll through channels faster.

- 4 Press [MEMORY].**
The channel will blink on the display.

To continue presetting
Repeat steps 1 through 4.

To listen to preset channels **B**

- 1 Press [PRESET].**
- 2 Press [TUNING (V or ^)].**
Holding down the buttons lets you scroll through channels faster.

The channel number flashes for approximately 5 seconds. Select the desired channel number during that time. After 5 seconds, the display will change from the channel number to the frequency.

Note

If you press [PRESET] while the channel number is displayed, the display will change to the frequency.

To confirm the channel number of the broadcast station being received

Press [PRESET].
(The channel number flashes for approximately 5 second.)

Note

The channel number is not displayed if you change the frequency or FM mode setting.

For your reference

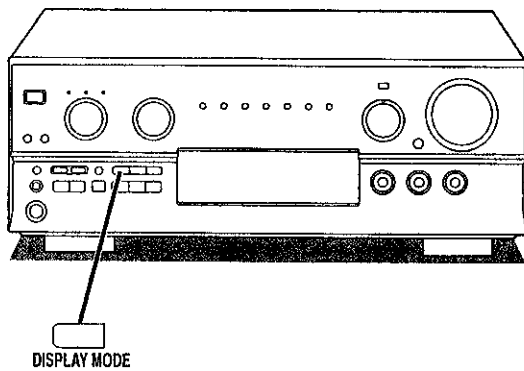
Even if the power cord is disconnected from the household AC outlet, the memory will retain its contents for approximately one month.

If frequency presettings are accidentally erased

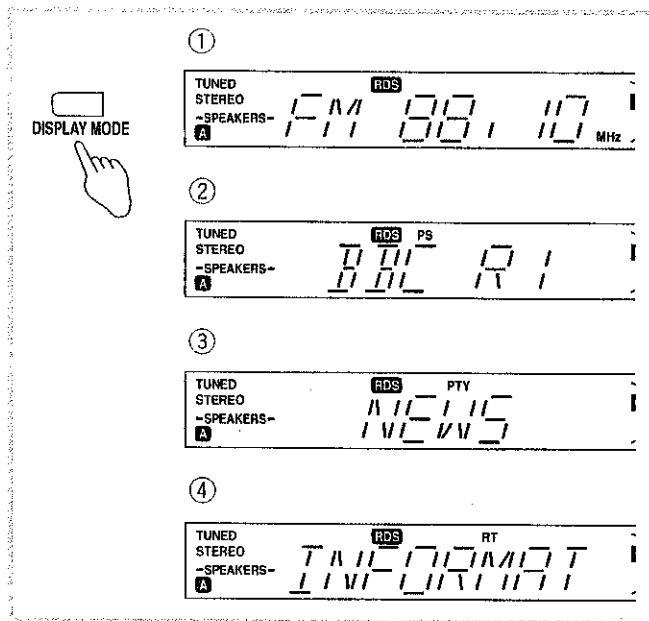
Program the presettings once again.
The power cord should remain connected for one hour or more for the memory back-up to be effective.

Enjoying RDS broadcasts

Only for the United Kingdom



DISPLAY MODE



RDS (Radio data system) is a multiplex broadcasting system. Along with the audio signals of FM broadcasts, text information and other signals are transmitted to help you enjoy radio more and make tuning into programs easier. This unit can use the following types of signals.

- **PS (Program service):**

The name of the station can be displayed.

- **PTY (Program type):**

The type of program can be displayed. This signal can also be used to search for a type of program (➔ page 27). See page 29 for more information about the PTY displays.

- **EON (Enhanced other networks):**

This signal is used between networked stations to make it easier for listeners to tune in to a type of program (➔ page 28).

- **RT (Radio text):**

This is text transmitted by the station. This unit can show a maximum of 64 characters by scrolling it across the screen. The text could be information about the song playing, traffic and weather reports, phone-in numbers, or police information.

Some areas do not currently have PTY, EON, and RT.

To display RDS information

The display normally shows the radio frequency. When the "RDS" indicator lights, the station is broadcasting RDS signals.

Press [DISPLAY MODE].

Each time the button is pressed, the display changes as follows.

- ➔ ① **Frequency display**
- ➔ ② **PS display**
(See below if PS is not displayed)
- ➔ ③ **PTY display**
("NO PTY" is displayed if PTY signals are not being received, then the frequency is shown again.)
- ➔ ④ **RT display**
(There is no change if RT signals are not being received.)

If RDS signals are not being received, the "RDS" indicator does not light and there is no change when the button is pressed.

For your reference

Occasionally PS isn't displayed even if PS signals are being received. You may be able to see PS if you change the reception mode.

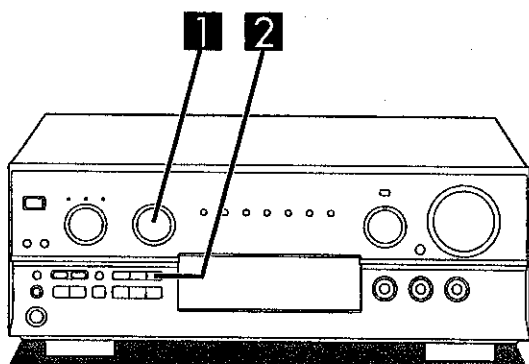
Press and hold [DISPLAY MODE].

The mode switches between "MODE 1" and "MODE 2" every time the button is pressed and held.

If PS isn't displayed, PS signals are not being received. Restore "MODE 1" in this case.

Enjoying RDS broadcasts

Only for the United Kingdom



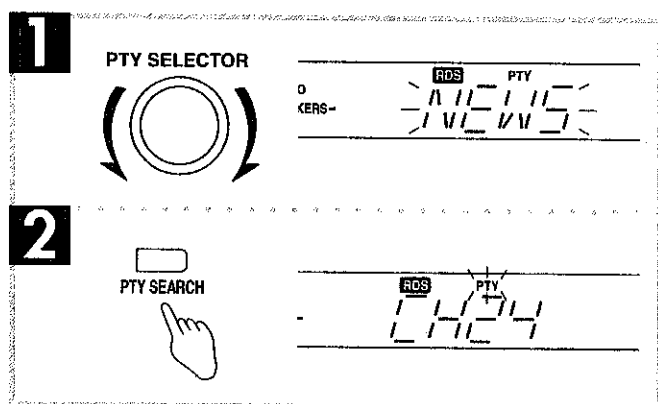
PTY search and EON tuning

Before trying to use these functions, it is necessary to preset radio stations into the receiver's memory (→ page 24–25). Neither of these functions will work if stations have not been preset.

PTY search

Carry out this operation while listening to an FM broadcast.

PTY search finds a particular type of program for you.



1 Turn [PTY SELECTOR] to select the desired program type.

Each time you turn the selector, the PTY display will change in sequence. (For PTY displays: → page 29.)

2 While the PTY display is flashing (approx. 10 seconds) Press [PTY SEARCH].

"PTY" flashes while the search is carried out.

When the selected type of program is located:

The receiver automatically switches over to the station broadcasting the program. The PTY indicator continues to flash for about two seconds after the program is found. During this time the display changes, first showing the preset channel number, then the frequency of the station, and finally the previously selected display mode is resumed.

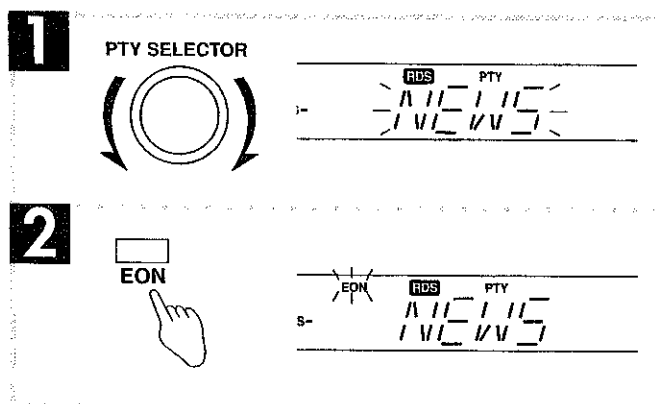
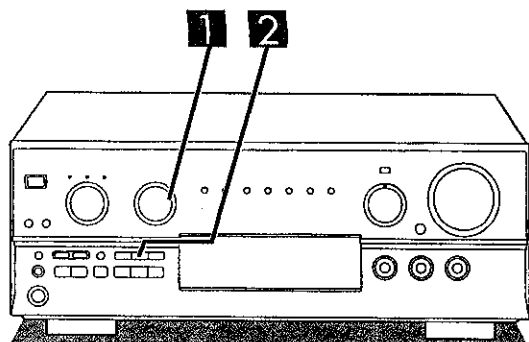
Restarting a search:

It is possible to restart the search during the two seconds that the PTY indicator is flashing after the program is found, simply by pressing [PTY SEARCH] again.

It is also possible to search for the same kind of program on another station by pressing [PTY SEARCH] at any time if the display is in PTY mode. If [PTY SEARCH] is pressed in any other mode, the message "SELECT PTY FIRST" scrolls across the display.

If the desired type of program is not found:

"NO PTY" will be displayed for a moment, then the current frequency and the receiver will return to the original display.



EON tuning

EON tuning is useful if the type of program you want to listen to is not currently being broadcast. It allows you to set the unit to automatically change to a particular type of program when one begins.

EON tuning only works if RDS data and EON signals are being received.

EON tuning finds programs on stations that share EON signals.

1 Turn [PTY SELECTOR] to select the desired program type.

Each time you turn the selector, the PTY display will change in sequence. (For PTY displays: ➔ page 29.)

2 While the PTY display is flashing (approx. 10 seconds) Press [EON].

"EON" will light up.

The current station remains tuned in until the selected type of program begins. When the receiver finds the type of program you selected, "EON" appears on the display and the message "OTHER PROGRAM SERVICE" scrolls from right to left across the display. The receiver automatically changes over at this time. If the type of program you selected is currently broadcasting, the receiver will immediately change to that station.

Note

EON tuning turns OFF if you operate the tuner (➔ pages 22–25), change the input source, or turn the unit OFF.

When "NO EON" is displayed:

The broadcast you are presently receiving does not provide EON service.

To check the program type while on reception standby:

Turn [PTY SELECTOR].

The program type last selected will be displayed for approximately 2 seconds. ("EON" will flash.)

Note

If you turn the selector again while the program type is being displayed, you will turn EON tuning OFF.

To cancel EON tuning:

Press [EON].

"EON" will go out.

Enjoying RDS broadcasts

Only for the United Kingdom

About the PTY display

There are a total of 31 PTY displays on this unit. The display changes each time [PTY SELECTOR] is turned.

The table below shows the order in which the display changes, and also gives an explanation of each display.

Display	Explanation
NEWS	News
AFFAIRS	Current affairs
INFO	Information
SPORT	Sport
EDUCATE	Education
DRAMA	Drama
CULTURE	Culture
SCIENCE	Science
VARIED	Varied
POP M	Pop music
ROCK M	Rock music
M. O. R. M.	Middle-of-the-road Music
LIGHT M	Light classical
CLASSICS	Serious classical
OTHER M	Other music
WEATHER	Weather information
FINANCE	Finance
CHILDREN	Children
SOCIAL A	Social affairs
RELIGION	Religion
PHONE IN	Phone in
TRAVEL	Travel
LEISURE	Leisure
JAZZ	Jazz music
COUNTRY	Country music
NATIONAL	National music
OLDIES	Oldies
FOLK M	Folk music
DOCUMENT	Documentary
TEST	Test broadcast
ALARM	Emergency announcement

Note

This unit does not have EBS-Emergency Broadcast System which tunes automatically into emergency broadcasts when they begin.

Digital Signal Processor (DSP)

You can take advantage of the following modes with this unit.

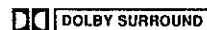
STEREO mode **A**

Use this mode when you want to listen to stereo sources, whether they are digital or analog, or when you want to playback Dolby Digital or DTS sources through two channels. The sounds usually fed through the other speakers are down-mixed so they are output through the left and right front speakers. There may be some change in the overall sound when surround sources are down-mixed.

SURROUND mode **B**

By selecting this mode while digital input is being used, the unit automatically determines the kind of digital source being used (Dolby Digital, Dolby Surround, or DTS), and processes it accordingly. Select this mode also when you are playing back an analog source, VCR for example, that has been recorded in Dolby Surround.

Software with the following mark can be played back in this mode.



DTS mode **C**

Select this mode if the DTS source you are playing back is not recognized by the SURROUND mode.

Software with the following mark can be played back in this mode.



If reception is weak or "TUNED" fails to light completely while playing the radio

Press and hold [-DSP ON/DEFEAT] until "DEFEAT" appears on the display.

Press and hold again to turn DSP on. The STEREO mode is selected.

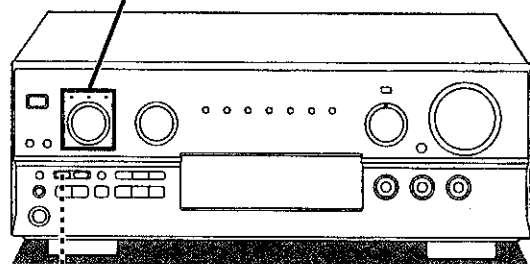
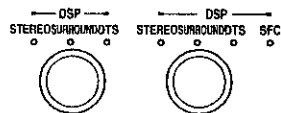
This allows you to play back sound without it passing through the digital signal processor (DSP). When this is selected, no sound will go through the center or surround speakers or the subwoofer.

Note

When "DEFEAT" is selected the sound mode indicators (STEREO, SURROUND, DTS and SFC (only for Australia and N.Z.)) go out and these modes can not be selected.

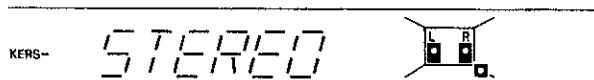
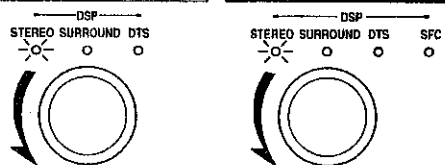
For the United Kingdom

For Australia and N.Z.

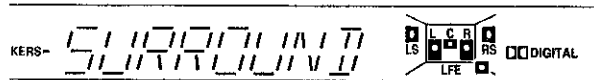
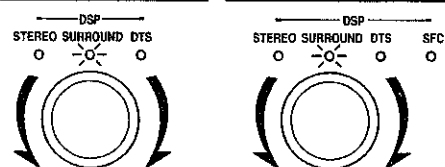


-DSP ON/DEFEAT

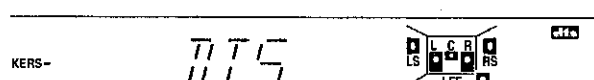
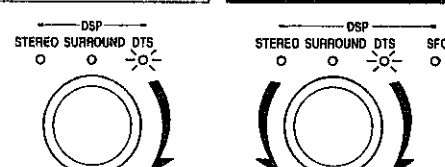
A For the United Kingdom For Australia and N.Z.



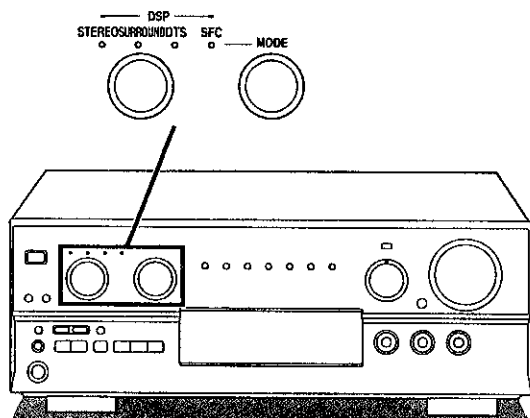
B For the United Kingdom For Australia and N.Z.



C For the United Kingdom For Australia and N.Z.



Digital Signal Processor (DSP)



SFC mode **Only for Australia and N.Z.**

The SFC (Sound Field Control) function gives presence and spread thereby enhancing and enriching the music or movie. Read the following explanations to better understand how to make your selection.

Note

SFC is designed to add surround-like effects to stereo sources. Select the appropriate mode when playing back Dolby Digital, DTS, or Dolby Surround sources.

HALL

This mode imparts a reflection and spread which will make you feel as if you are in a large concert hall.

CLUB

Like a jazz club, this mode provides an exciting and intimate atmosphere. It simulates the sound field of a relatively small room having a low ceiling and hard reflective surfaces, for a "live" sound with enhanced presence to bring the performers up close.

LIVE

Primarily for vocal pieces, this mode adds gloss to the vocals and you'll feel as though you were hearing a live stage performance.

THEATER

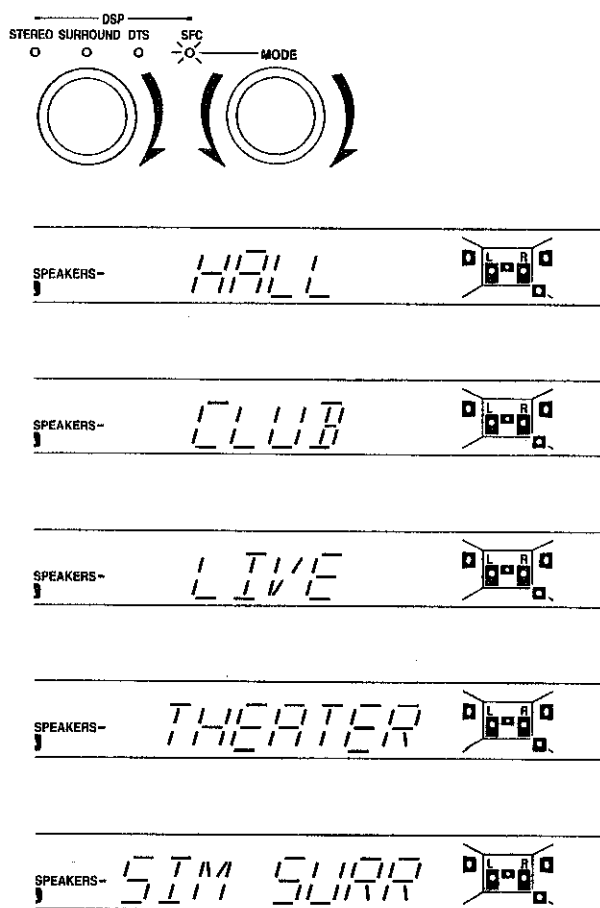
You can clearly perceive the directions and source of the movie. Real ambience of sound can also be recreated naturally using this mode.

SIMULATED (SIM SURR)

Choose this mode if little or no sound will be heard from the surround speakers.

You can feel as if you were in a more expanded space adding to the actual sound from the source.

This mode also adds effect to monaural sources by outputting sound from surround speakers.



Preparing for surround sound

Do these steps to get the most from your home theater system.

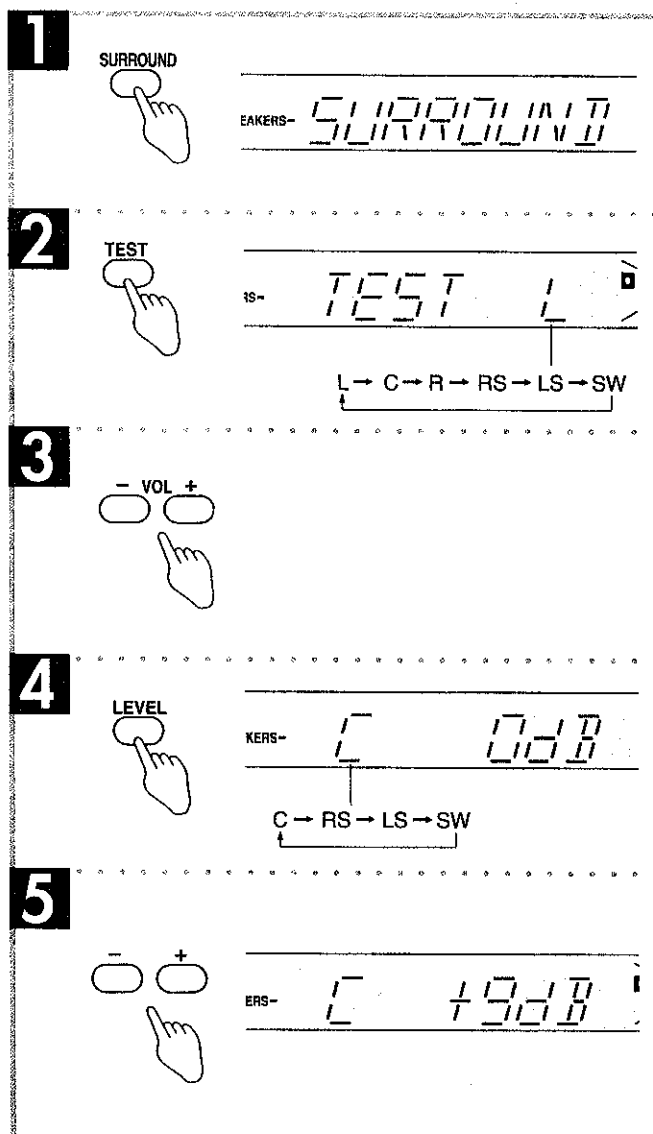
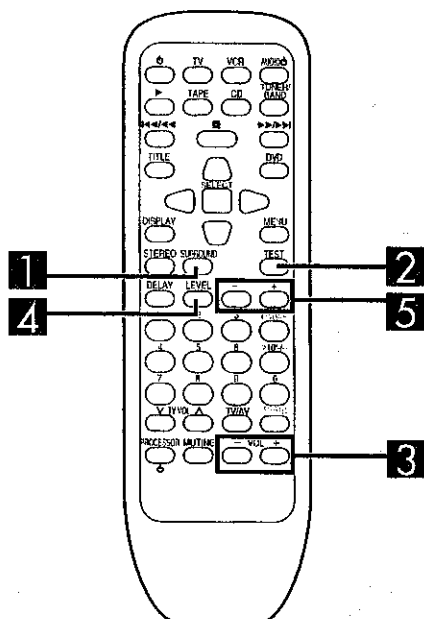
Adjusting speaker output level

by remote control

Adjust speaker level so the output from all the speakers is the same apparent level when sitting where you would normally enjoy a source.

Preparation

- Turn ON the speakers with [SPEAKERS A].
- Adjust front speaker balance with [BALANCE].



- 1 Press [SURROUND] to select "SURROUND."
"SURROUND" appears on the display.

Note

This procedure must be done in the SURROUND mode.

- 2 Press [TEST] to output the test signal.
"TEST" appears on the display.
The signal is output from each speaker in order for about two seconds each:

L: Front speaker (left)
C: Center speaker
R: Front speaker (right)
RS: Surround speaker (right)
LS: Surround speaker (left)
SW: Subwoofer

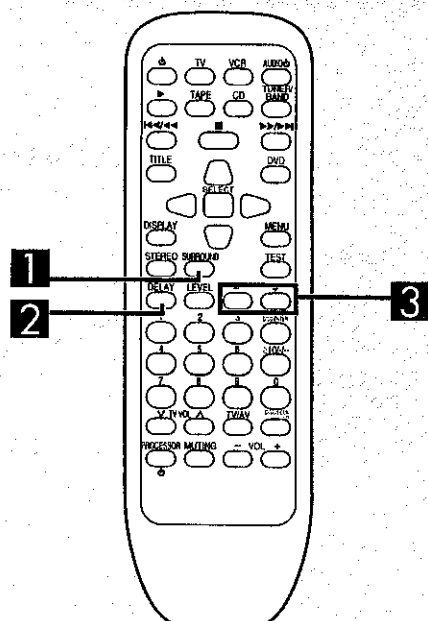
Speakers set as "NONE" or "OFF" are skipped.

- 3 Press [VOL (- or +)] to set the volume level normally used for enjoying the source.
- 4 Press [LEVEL] to select the speaker channel to adjust.
The current level appears on the display.
Press again to change the speaker channel.

Speakers set as "NONE" or "OFF" are skipped.
- 5 Press [-] or [+] to adjust the level to the same apparent level as the front speakers.
The four channels can be adjusted between -10 dB and +10 dB, with zero being the current level of the front speakers.
- 6 Repeat 4 and 5 for each speaker channel.

To stop the test signal
Press [TEST].

Preparing for surround sound



Adjusting the delay time

by remote control only

By adjusting the delay time, the difference in the distance from the viewing and listening position to the front speakers and the distance to the center speaker and surround speakers can be offset and made equal. This achieves better sound localization and makes a more life-like reproduction of the sound field possible.

Preparation

Prepare the unit in this manner even if you intend to playback analog sources.

- Select "DVD" with [INPUT SELECTOR] but ensure the source itself is off.
- Press [DIGITAL INPUT] to select "DIGITAL."

Note

Please note that following occurs if delay time is adjusted while playing back a source or analog input is selected:

- Adjustment is not possible if the source is DTS format.
- While the **PRO LOGIC** indicator is alight, the center channel cannot be adjusted and 15 ms are added to the delay times listed for the surround channel.

1 Press [SURROUND] to select "SURROUND."
"SURROUND" appears on the display.

2 Press [DELAY] to select the channel to be adjusted.

The current delay time is displayed.
Press again to change the speaker channel;
C (Center speaker) $\leftrightarrow$ S (Surround speakers)

Speakers set as "NONE" are skipped.

3 Press [-] or [+] to set the delay time.

The delay time changes with each press.
The increments depend on the channel being adjusted.

Speaker	Available delay time setting (ms)
Center	0, 1, 2, 3, 4, 5
Surround	0, 5, 10, 15

The display is restored if a button isn't pressed for 4 or more seconds.

To calculate the delay time **A**

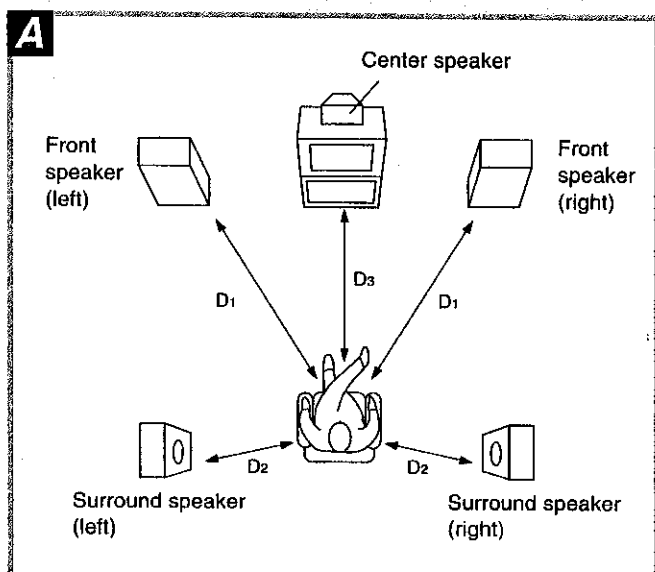
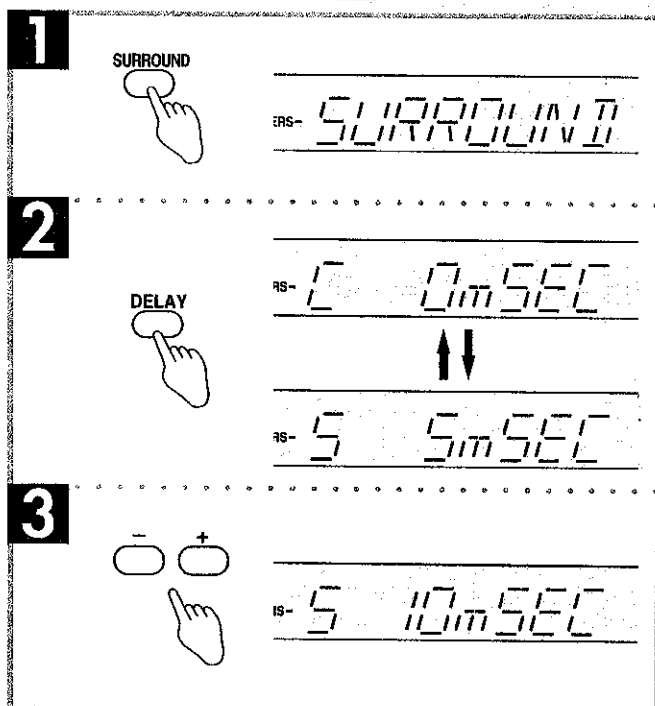
D1: Distance from front speakers
D2: Distance from surround speakers
D3: Distance from center speaker

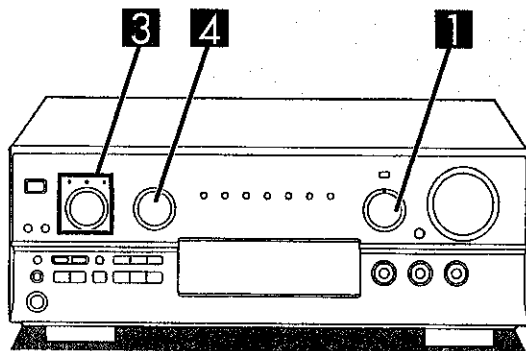
Setting the center channel delay time:

If D1 is equal to or less than D3	Set to 0 ms
If D3 less than D1	Increase 1 ms for every 30 cm of difference between D1 and D3

Setting the surround channel delay time:

If D1 is equal to or less than D2	Set to 0 ms
If D2 is less than D1	Start at 0 ms and increase by 5 ms for every 1.5 m of difference between D1 and D2





Ensure the front speakers are connected to the A terminals and "SPEAKERS A" is selected.

1 Turn [INPUT SELECTOR] to select the desired source.

2 Start the desired source.

3 Turn [DSP] to select the desired mode.

The selected reproduction mode appears on the display.
(➔ Page 30–31 for descriptions of the modes.)

STEREO: STEREO

SURROUND: SURROUND

Indicators light to indicate the sound format.

- Ⓐ **PRO LOGIC**: Lights if the source is Dolby Surround format.
- Ⓑ **DTS**: Lights if the source is DTS format.
- Ⓒ **DIGITAL**: Lights if the source is Dolby Digital Format.

DTS: DTS

SFC (only for Australia and N.Z.):

HALL, CLUB, LIVE, THEATER or SIM SURR

Note

Select the mode to suit the source's format. Dolby Digital and DTS, for example, cannot be played back in an SFC mode. If either **DTS** or **DIGITAL** appear while using SFC, use SURROUND instead.

4 Only for Australia and N.Z.

(only if you select SFC in the above step)

Turn [MODE] to select the desired SFC mode.

For your reference

You can set the sound mode for each source.
Each source will retain the selected mode.

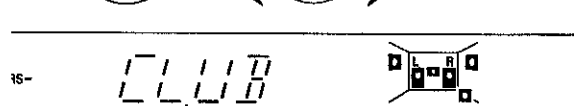
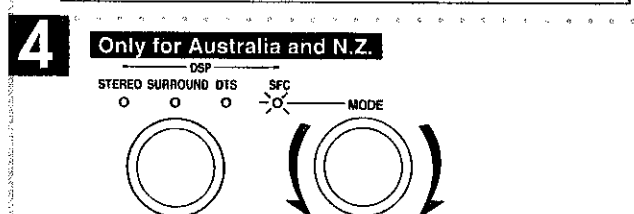
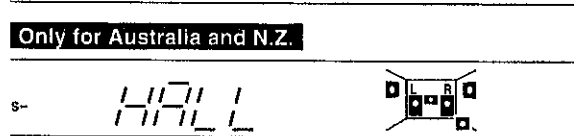
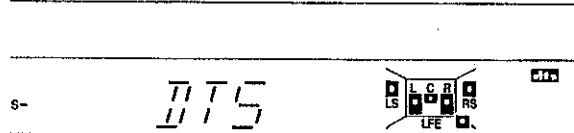
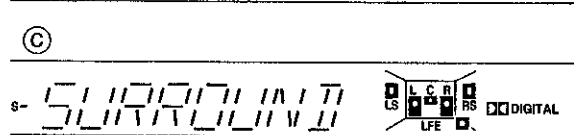
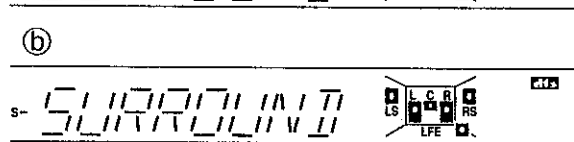
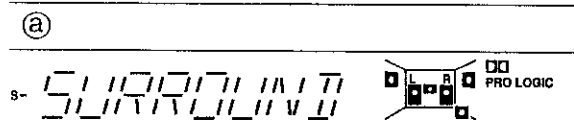
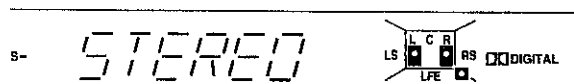
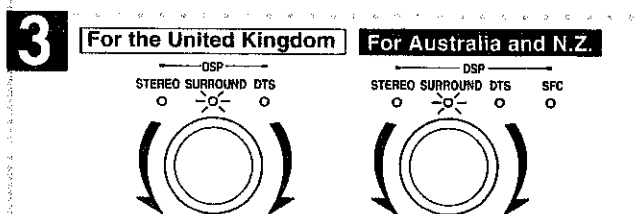
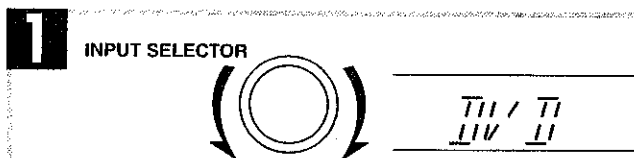
Note

These modes cannot be turned on while SPEAKERS B is on. These modes are automatically switched to STEREO if SPEAKERS B is selected and the modes in the memory for all sources will also be switched to STEREO. The modes must be selected again for all sources when SPEAKERS B is turned off again.

Only Dolby Digital, DTS or PCM signals * can be reproduced through the digital terminal:

- The digital input signal of sampling frequencies 96 kHz and other signal formats such as MPEG cannot be reproduced on this unit.
To playback sources with these signal formats, use analog 6 channel connection and use DVD 6CH INPUT mode.
(➔ Page 36.)
- When playback is started, the sound may be cut or interrupted before the input source is confirmed as Dolby Digital or DTS.

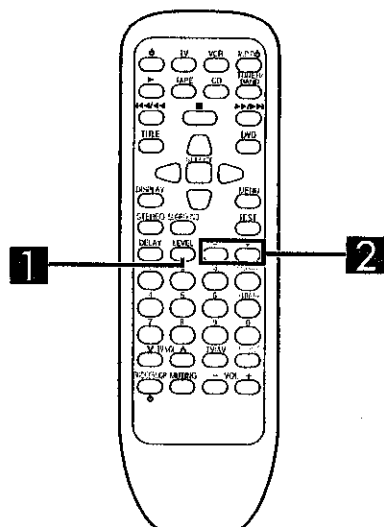
* PCM signal: This refers to the recording format of signals (44.1 kHz, linear 16 bits) used for audio CDs.



Selected mode

Enjoying sound modes

A



Adjusting field of sound in the SFC mode

Only for Australia and N.Z.

by remote control only

With this unit, you can adjust speaker volume.
Adjust the field of sound while listening to a source.

To adjust the volume of each speakers **A**

- 1 Press [LEVEL] to select the speaker channel to adjust.

The output level appears on the display.

Each time the button is subsequently pressed, the speaker whose level is to be set is selected in the listed sequence.

C → RS → LS → SW

Speakers for which "NONE" or "OFF" has been set are skipped.

- 2 Press [-] or [+] to adjust the output level.

Channels C, RS, LS, and SW can be adjusted between -10 dB and +10 dB.

To adjust the delay time of the surround speakers **B**

- 1 Press [DELAY].

- 2 Press [-] or [+] to adjust the delay time.

Select a delay time to suit your individual needs.

Delay time can be set at 10 milliseconds (ms) intervals between 10 and 100 ms.

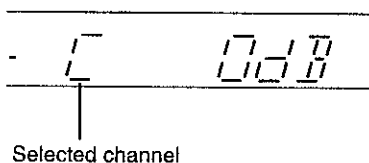
The factory settings for each mode are 50 ms.

For your reference

Settings for volume level and delay time can be done for each SFC mode.

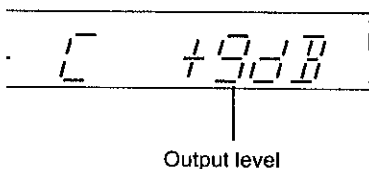
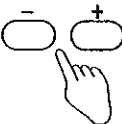
1

LEVEL



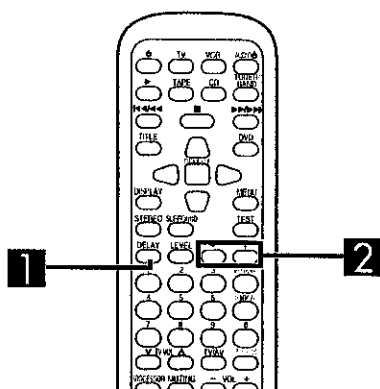
Selected channel

2



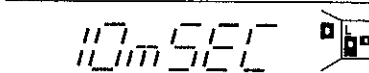
Output level

B

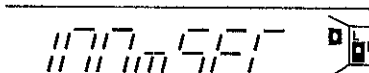
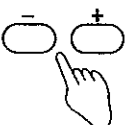


1

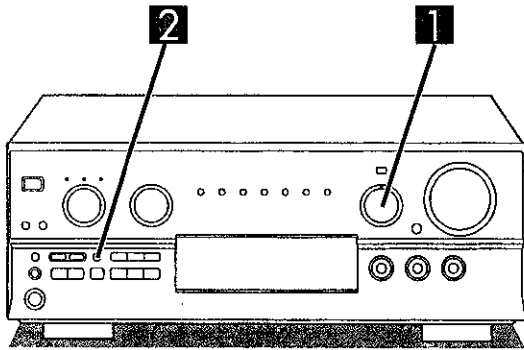
DELAY



2



DVD 6CH INPUT mode



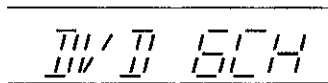
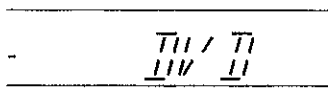
1

INPUT SELECTOR



2

DVD 6CH INPUT



Use this mode to reproduce 6 channel discrete sources that have been connected using analog 6 channel input. This bypasses the decoders in this unit.

Ensure the front speakers are connected to the A terminals and "SPEAKERS A" is selected.

1 Turn [INPUT SELECTOR] to select "DVD."

2 Press [DVD 6CH INPUT] to select "DVD 6CH."

Changes as follows, each time the button is pressed.
DVD 6CH ↔ DVD (2CH)

If you press this button while another source (CD, PHONO, etc.) is selected, the receiver switches the source to DVD and engages the DVD 6CH INPUT mode.

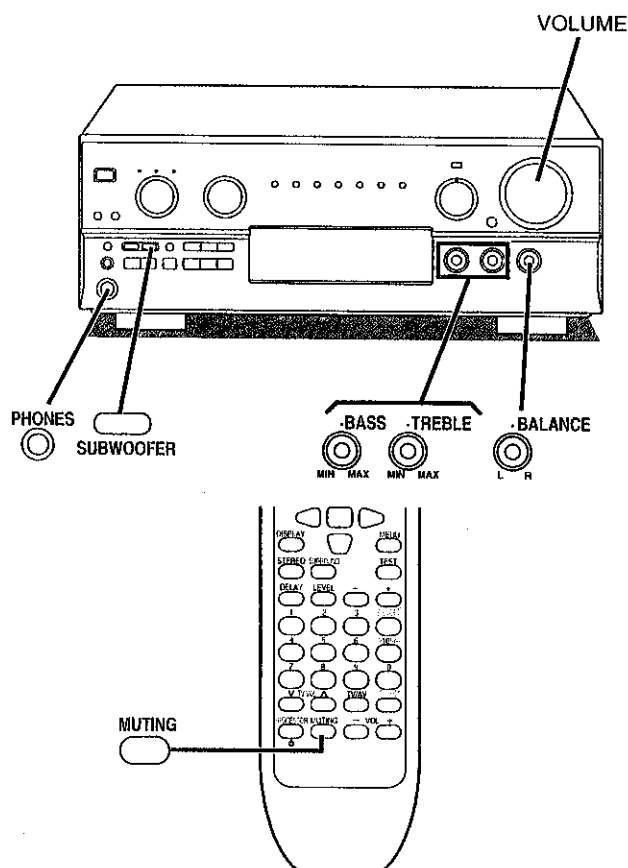
3 Start the desired source.

Follow your equipment's operating instructions.

Note

- You cannot select a DSP mode while in the DVD 6CH INPUT mode.
- This mode cannot be turned on while SPEAKERS B is on. This mode is automatically cancelled if SPEAKERS B is selected and the modes in the memory for all sources will also be switched to STEREO. The modes must be selected again for all sources when SPEAKERS B is turned off again.
- Any speaker settings you have made (➡ page 18–19) are ineffective in the DVD 6CH INPUT mode. If you need to change speaker settings, make the settings on the other unit.

Other functions



To adjust the tone quality

A

Turn [BASS] to adjust the low frequency sound.
Turn [TREBLE] to adjust the high frequency sound.

To adjust the sound balance

B

Turn [BALANCE] to adjust the left/right sound balance.

To mute the sound level

C

by remote control only

Press [MUTING].

The message "MUTING ON NOW" runs repeatedly from right to left across the display as long as the muting function is on.

Press once again to return to the previous volume level.

Note

Muting is cancelled when the receiver is turned off.

To listen through headphones

D

- ① Reduce the volume level.
- ② Connect the headphones.
Plug type: 6.3 mm stereo
- ③ Adjust the volume level.

Select STEREO or turn speakers A and B off when using headphones. Turning the speakers off automatically engages STEREO mode and ensures no sound is heard from the subwoofer. If either SURROUND or DTS is used, the sound heard through the headphones will seem unusual.

Note

Avoid listening for prolonged periods of time to prevent hearing damage.

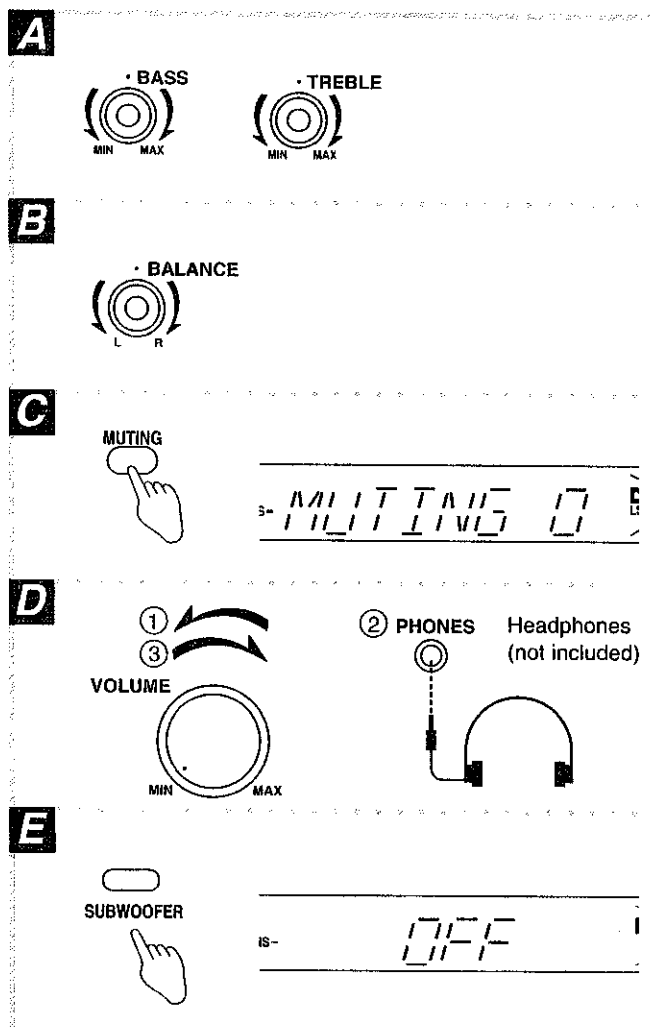
Turning the subwoofer off

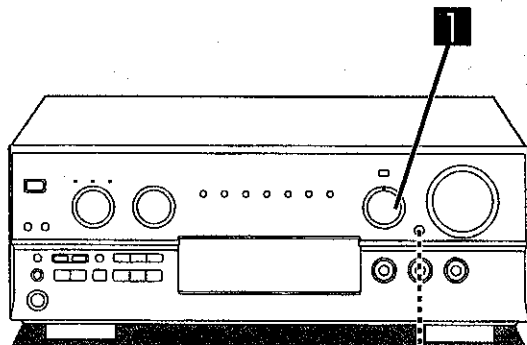
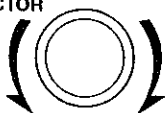
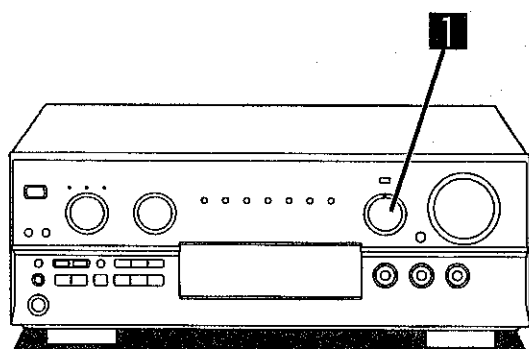
E

You can turn the subwoofer off when you want to listen to music in stereo.

Press [SUBWOOFER] to select "OFF."
(⇒ Page 19.)

You can also adjust the volume of the subwoofer to suit the source you are using.
(⇒ Page 32 for details.)



A**TAPE MONITOR****1****INPUT SELECTOR****B****TAPE MONITOR****C****1****INPUT SELECTOR**

Making a recording

Note

- You cannot record a source connected through a digital terminal.
- When recording CD, or DVD, ensure the source is connected through the corresponding analog terminals (➔ page 13) and "ANALOG" input is selected (➔ page 20).
- When you select DVD 6CH INPUT mode, only sound from the front left and right speakers is recorded.

Recording on a tape deck

A

Before recording, prepare the tape deck.
See the tape deck's operating instructions for details.

1

Turn **[INPUT SELECTOR]** to select the source to be recorded.

Any source can be selected except TAPE.

2

Begin recording on the tape deck.

Follow your tape deck's operating instructions.

3

Begin the source to be recorded.

Follow your equipment's operating instructions.

To monitor the recorded sound **B**

It is possible to check the sound being recorded if your tape deck is a 3 head system.

Press **[TAPE MONITOR]** on this unit and set the monitor button on the tape deck to "TAPE."

Press **[TAPE MONITOR]** once again to turn it off.

Recording on a VCR

C

Before recording, prepare the VCR.
See the VCR's operating instructions for details.

1

Turn **[INPUT SELECTOR]** to select the source to be recorded.

Any source can be selected except VCR and TAPE.

Note

Recording from the tape deck is not possible.

2

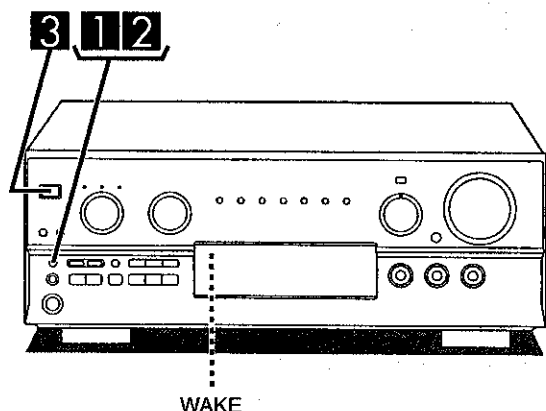
Begin recording on the VCR.

Follow your VCR's operating instructions.

3

Begin the source to be recorded.

Follow your equipment's operating instructions.



Timer function

There are two timer functions: the sleep timer and the wake timer.

• Sleep timer:

The unit turns off after a set time.

It can be set for 30, 60, or 90 minutes.

• Wake timer:

The unit can be set to turn on a certain number of hours after it is turned off.

It can be set for 5, 7, or 9 hours.

Setting the timers

1 Press [TIMER] to select the desired timer mode.

The timer mode changes as follows:

SLEEP → WAKE → OFF

2 [Within 5 seconds] Press [TIMER] and release when the time you require is displayed.

The display changes as follows:

• In sleep timer mode

30 → 60 → 90 (minutes)

• In wake timer mode

5H → 7H → 9H (hours)

The display is restored 5 seconds after the setting is completed.

3 Wake timer mode only Press [⏻/I] to turn off the unit. The "WAKE" indicator lights up.

Checking the remaining time on the sleep timer and the time you have set for the wake timer

Press [TIMER] once.

Note

Do not press [TIMER] again before the remaining time indication goes out.

The setting may change if you do this.

Changing a setting

Repeat steps 1 and 2.

To cancel the timer

Press [TIMER] until "OFF" is displayed.

"SLEEP" or "WAKE" will go out.

Note

• The timers cannot be used together.

• The sleep timer turns off the receiver, and the wake timer turns on the receiver, but they do not turn off/on any externally connected components.

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.

If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized Service Centers (enclosed with this unit) to locate a convenient service center, or consult your dealer for instructions.

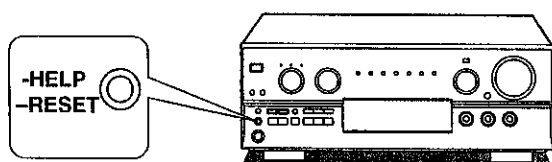
Problem	Probable cause(s)	Suggested remedy	Page(s)
While listening to FM broadcasts			
Hiss is heard during stereo broadcasts, but not during monaural ones.	Modulation for the two types is different so some noise may be heard during stereo broadcasts.	• Reduce the treble. • Change the location and direction of the antenna.	37 14
Excessive noise in both stereo and monaural broadcasts.	Antenna location and direction poor.	• Use an outdoor antenna. • Use an antenna with more elements.	14 14
	Station is distant.		
	DSP is on.	• Select "DSP DEFEAT."	30
STEREO and TUNED indicators flicker.	Antenna location and direction poor.	• Change the location and direction of the antenna.	14
	Station is distant.	• Use an outdoor antenna. • Use an antenna with more elements.	14 –
Stereo broadcasts highly distorted.	Building or mountain nearby.		–

While listening to AM broadcasts			
Unusual "beat" sound is heard.	A television is on nearby.	• Separate the two or turn the television off.	–
	Adjacent signal is interfering.	• Reduce the treble.	37
	DSP is on.	• Select "DSP DEFEAT."	30
Low-pitched "hum" is heard when a station is tuned.	Power cord is near the antenna wires.	• Separate the power cord from the wires.	–
	Electronic interference from the power cord is fed to the speakers.	• Use an outdoor antenna.	15
A continuous or intermittent hiss is heard.	Interference from other appliances.	• Separate this unit from such appliances.	–
An AM broadcast station cannot be picked up clearly.	Frequency steps is set to 10 kHz.	• Hold down [BAND] for about 3 seconds. this will changes frequency step to 9 kHz.	22

While enjoying the surround modes			
Sound is not heard from the center, surround or subwoofer speakers	The presence setting of the speaker has been incorrectly set to "NONE" or "OFF."	• Set the type and presence setting of each speaker correctly.	18, 19
	The DSP mode is set to "STEREO."	• Set to SURROUND or DTS reproduction mode.	30
A DTS formatted source cannot be played back in the SURROUND mode.	This DTS source couldn't be processed by the SURROUND mode.	• Select the DTS reproduction mode.	30
SURROUND, DTS, and SFC (only for Australia and N.Z.) cannot be selected.	DSP is off.	• Select "DSP ON."	30

Problem	Probable cause(s)	Suggested remedy	Page(s)
Common Problems			
Unit doesn't come on.	The power cord plug is not fully inserted.	• Confirm the plug is fully inserted.	–
Sound is not heard.	The speaker indicators are off.	• Turn on the speaker indicators.	20
	The tape monitor function is on.	• Press the tape monitor button.	21
	The muting function is on.	• Press the muting button on the remote control.	37
	Incomplete or incorrect connection to speakers and external equipment.	• Check all connections.	12, 13, 16, 17
	The incorrect input source has been selected.	• Select the correct source.	20
Sound suddenly stops or none is heard when the unit is switched on. "OVERLOAD" appears on the display.	The protection circuitry has functioned because: the positive and negative speakers wires have shorted; speakers with a lower impedance than this unit's rated impedance are being used; the speakers are under strain through excessive volume, excessive power, or by being used in a high temperature environment.	• Switch off the unit, determine and correct the cause, then switch the unit on. • Use speakers with the right impedance rating.	– 16, 17
"F70" appears on the display.		• Turn off the power and then turn it on again, or disconnect the AC power supply cord and then connect it to your household AC outlet again. (If "F70" still remains on the display, consult an authorized service center or your dealer.)	–

About the HELP function



If you make a mistake in operation or if sound output stops due to some operation which was performed, the HELP function displays information which can be useful for indicating the method by which this condition can be remedied.

If "ERROR" or scrolling characters (for instance, "SPEAKER OFF NOW") appear on the display during operation, carry out the following operation.

Press [-HELP, -RESET].

The method for remedying this situation will be displayed.

For your reference

If the above button is pressed for 2 seconds or more until "RESET" appears on the display, the operation settings for the unit will be initialized to the settings made at the time of shipment. However, any broadcasting stations which have been preset into memory will not be erased at this time.

■ AMPLIFIER SECTION

Power output (at 240 V)	
DIN 1 kHz (T.H.D. 1 %)	2 x 100 W (6 Ω)
20 Hz–20 kHz continuous power output	
both channels driven	2 x 80 W (6 Ω)
Total harmonic distortion	
rated power at 20 Hz–20 kHz	0.05 % (6 Ω)
half power at 1 kHz	0.03 % (6 Ω)
Power output at the Dolby Pro Logic operation	
DIN 1 kHz (T.H.D. 1 %)	
Front	2 x 100 W (6 Ω)
Center	100 W (6 Ω)
Surround	2 x 100 W (6 Ω)
Power bandwidth	
both channels driven, –3 dB	10 Hz–40 kHz (6 Ω)
Damping factor	30 (6 Ω)
Load impedance	
Front	
A or B	4–16 Ω
A and B	8–16 Ω
Center	6–16 Ω
Surround	6–16 Ω
Frequency response	
PHONO RIAA standard curve (30 Hz–15 kHz) ±0.8 dB	
CD, TAPE, DVD, TV, VCR	10 Hz–40 kHz, ±3 dB
Input sensitivity and impedance	
PHONO	3 mV/47 kΩ
CD, TAPE, DVD, TV, VCR	200 mV/22 kΩ
S/N at rated power (6 Ω)	
PHONO	70 dB (IHF, A: 80 dB)
CD, TAPE, DVD, TV, VCR	75 dB (IHF, A: 85 dB)
Tone controls	
BASS	50 Hz, +10 to –10 dB
TREBLE	20 kHz, +10 to –10 dB
Output voltage	
TAPE REC (OUT), VCR OUT	200 mV
Channel balance (250 Hz– 6.3 kHz)	±1 dB
Channel separation	55 dB
Headphones output level and impedance	430 mV/330 Ω
Subwoofer frequency response	7–100 Hz, ±3 dB

Digital input	
Optical	CD, DVD

■ FM TUNER SECTION

Frequency range	87.50–108.00 MHz
Sensitivity	
S/N 30 dB	1.5 μV/75 Ω
S/N 26 dB	1.3 μV/75 Ω
S/N 20 dB	1.2 μV/75 Ω
IHF usable sensitivity (IHF'58)	1.5 μV/75 Ω
IHF 46 dB stereo quieting sensitivity	22 μV/75 Ω
Total harmonic distortion	
MONO	0.2 %
STEREO	0.3 %
S/N	
MONO	60 dB (73 dB, IHF)
STEREO	58 dB (67 dB, IHF)
Frequency response	
20 Hz–15 kHz	+1 dB, –2 dB
Alternate channel selectivity	
±400 dB	65 dB
Capture ratio	1.5 dB
Image rejection at 98 MHz	40 dB
IF rejection at 98 MHz	70 dB
Spurious response rejection at 98 MHz	70 dB
AM suppression	50 dB
Stereo separation	
1 kHz	40 dB
Carrier leak	
19 kHz	–30 dB (–35 dB, IHF)
38 kHz	–50 dB (–55 dB, IHF)
Channel balance (250 Hz–6.3 kHz)	±1.5 dB
Limiting point	1.2 μV
Bandwidth	
IF amplifier	180 kHz
FM demodulator	1000 kHz
Antenna terminal	75 Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	522–1611 kHz (9 kHz steps)
	530–1620 kHz (10 kHz steps)
Sensitivity	20 μV, 330 μV/m
Selectivity (at 999 kHz)	55 dB
IF rejection (at 999 kHz)	50 dB

■ VIDEO SECTION

Output voltage at 1 V input (unbalanced)	1±0.1 Vp-p
Maximum input voltage	1.5 Vp-p
Input/output impedance	75 Ω (unbalanced)

■ GENERAL

Power supply	AC 230–240 V, 50 Hz
Power consumption	240 W
	(in standby condition: 2 W)
Dimensions (W x H x D)	430 x 158 x 324.5 mm
Weight	9.7 kg

Notes:

- Specifications are subject to change without notice.
Weight and dimensions are approximate.
- Total harmonic distortion is measured by the digital spectrum analyzer.

Maintenance

If the surfaces are dirty

To clean this unit, wipe with a soft, dry cloth.

If the surfaces are extremely dirty, use a soft cloth dipped in a soap-and-water solution or a weak detergent solution.

- Never use alcohol, paint thinner or benzine to clean this unit.
- Before using chemically impregnated cloth, read the instructions that came with the cloth carefully.

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RQT5019-B
H0399V0